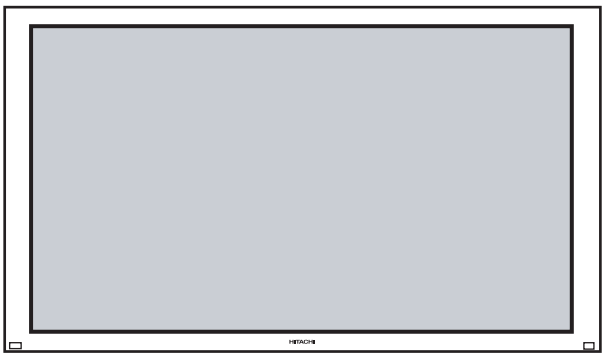
HITACHI

SM 0067

CMP5000WXE
CMP5000WXJ
CMP5000WXU

SERVICE MANUAL (Rev.A)



Contents

1. SAFETY INFORMATION ---------- 2
1.1 SAFETY PRECAUTIONS ---------- 2
1.2 PRODUCT SAFETY NOTICE ---------- 3
1.3 CHARGED SECTION AND HIGH VOLTAGE GENERATING POINT ---------- 4
2. EXPLODED VIEWS AND PARTS LIST ---------- 6
2.1 PLASMA DISPLAY (CMP5000WX) ---------- 6
2.2 VIDEO CARD (CMPAV05)----------25
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM ----------26
3.1 BLOCKDIAGRAM ----------26
3.2 WAVE FORMS ----------41
6. ADJUSTMENT----------66
6.1 SERVICE FACTORY MODE ---------- 66
6.2 ADJUSTMENT REQUIRED WHEN THE SET IS REPAIRED OR REPLACED ----------101
6.3 ADJUSTMENT ----------102
7. GENERAL INFORMATION ---------- 126
7.1 DIAGNOSIS ---------- 126
7.2 IC INFORMATION ---------- 142
8. PANEL FACILITIES AND SPECIFICATIONS ---------- 174
8.1 PANEL FACILITIES ---------- 174
8.2 SPECIFICATIONS ---------- 181
8.3 PIN LAYOUT ---------- 184
9. REPLACEMENT PARTS LIST ---------- 185

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

Plasma Display

April 2002 Digital Media Division

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

1.1 SAFETY PRECAUTIONS

NOTICE :Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

The following precautions should be observed :

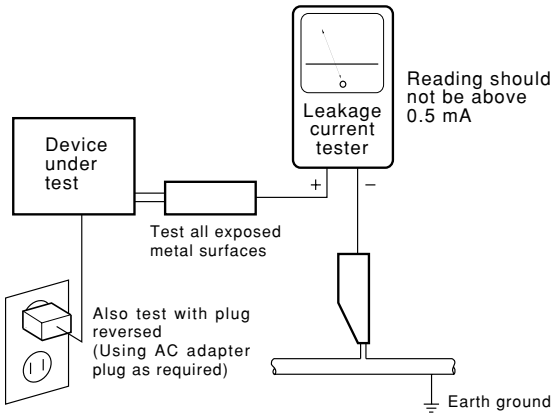
1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.
2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacture's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's.
   Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacture has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and service technician.
6. Perform the following precautions against unwanted radiation and rise in internal temperature.
   - Always return the internal wiring to the original styling.
   - Attach parts (Gascket, Ferrite Core, Ground, Rear Cover, Shield Case etc.) surely after disassembly.
7. Perform the following precautions for the PDP panel.
   - When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
   - Make sure that the panel vent does not break. (Check that the cover is attached.)
   - Handle the FPC connected to the panel carefully.
     Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.
8. Pay attention to the following.
   - Be sure to wire the fan. If the fan does not work, the temperature will rise and cause the protection circuit to operate.
   - When the front case is removed, infrared ray is radiated and may disturb reception of the remote control unit.
   - Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

Leakage Current Cold Check

With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 0.3MΩ and a maximum resistor reading of 5MΩ. Any resistor value below or above this range indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).
Turn the AC power switch on.
Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 0.5mA.


Leakage current tester
Reading should not be above 0.5 mA
Device under test
+
–
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

1.2 PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in HITACHI set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the HITACHI recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.
Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current HITACHI Service Manual. A subscription to, or additional copies of, HITACHI Service Manual may be obtained at a nominal charge from HITACHI.

1.3 CHARGED SECTION AND HIGH VOLTAGE GENERATING POINT

■ Charged Section

The places where the commercial AC power is used without passing through the power supply transformer.
If the places are touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. Therefore, be sure to connect the set via an insulated transformer and supply the current.

1. AC Power Cord
2. AC Inlet with Filter
3. Power Switch (S1)
4. Fuse (In the SW POWER SUPPLY Module)
5. STB Transformer and Converter Transformer (In the SW POWER SUPPLY Module)
6. Other primary side of the SW POWER SUPPLY Module

■ High Voltage Generating Point

The places where voltage is 100V or more except for the charged places described above. If the places are touched, there is a risk of electric shock.

1. SW POWER SUPPLY Module ..... (225V)
2. X DRIVE Assy ..... (–300V to 225V)
3. Y DRIVE Assy ..... (355V)
4. SCAN (A) Assy ..... (355V)
5. SCAN (B) Assy ..... (355V)
6. X CONNECTOR (A) Assy ..... (–300V to 225V)
7. X CONNECTOR (B) Assy ..... (–300V to 225V)

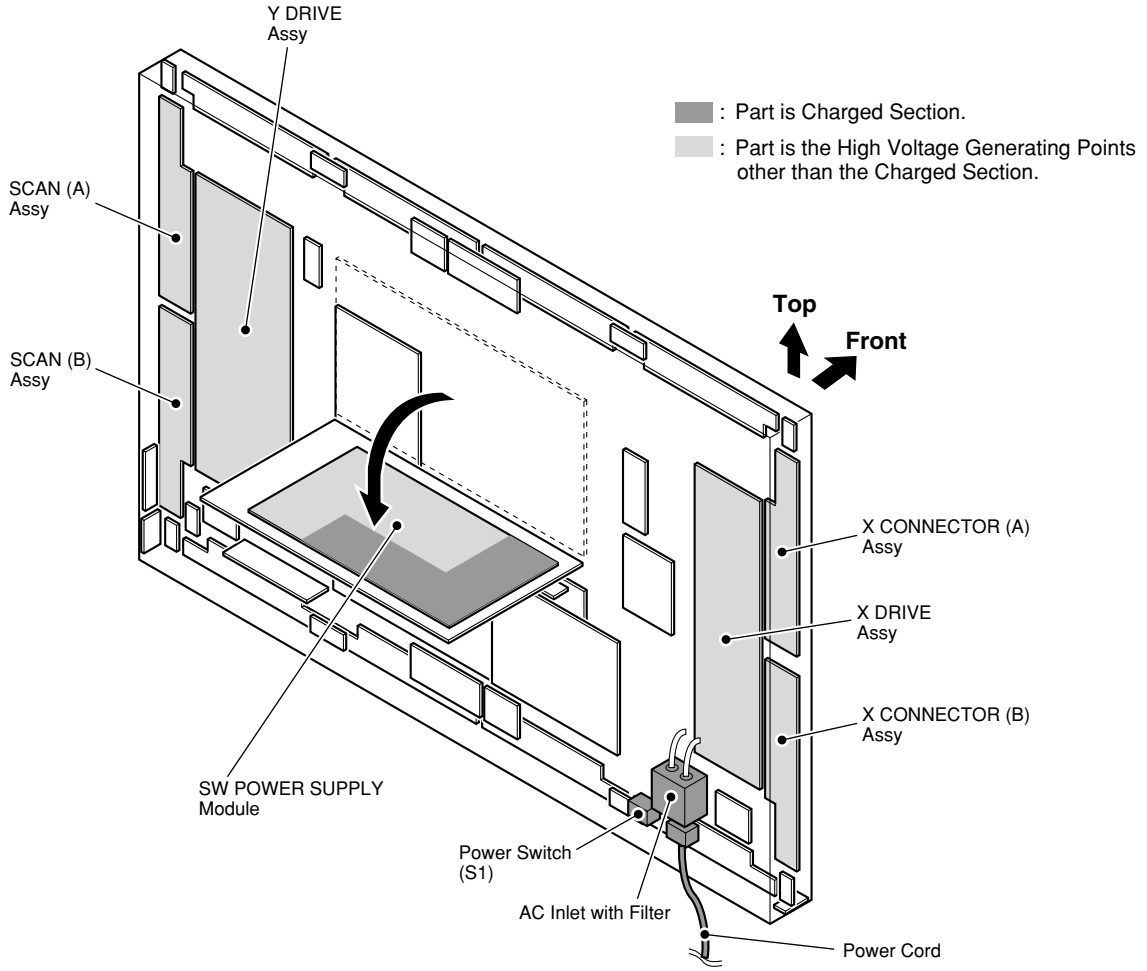


Fig.1 Charged Section and High Voltage Generating Point (Rear View)

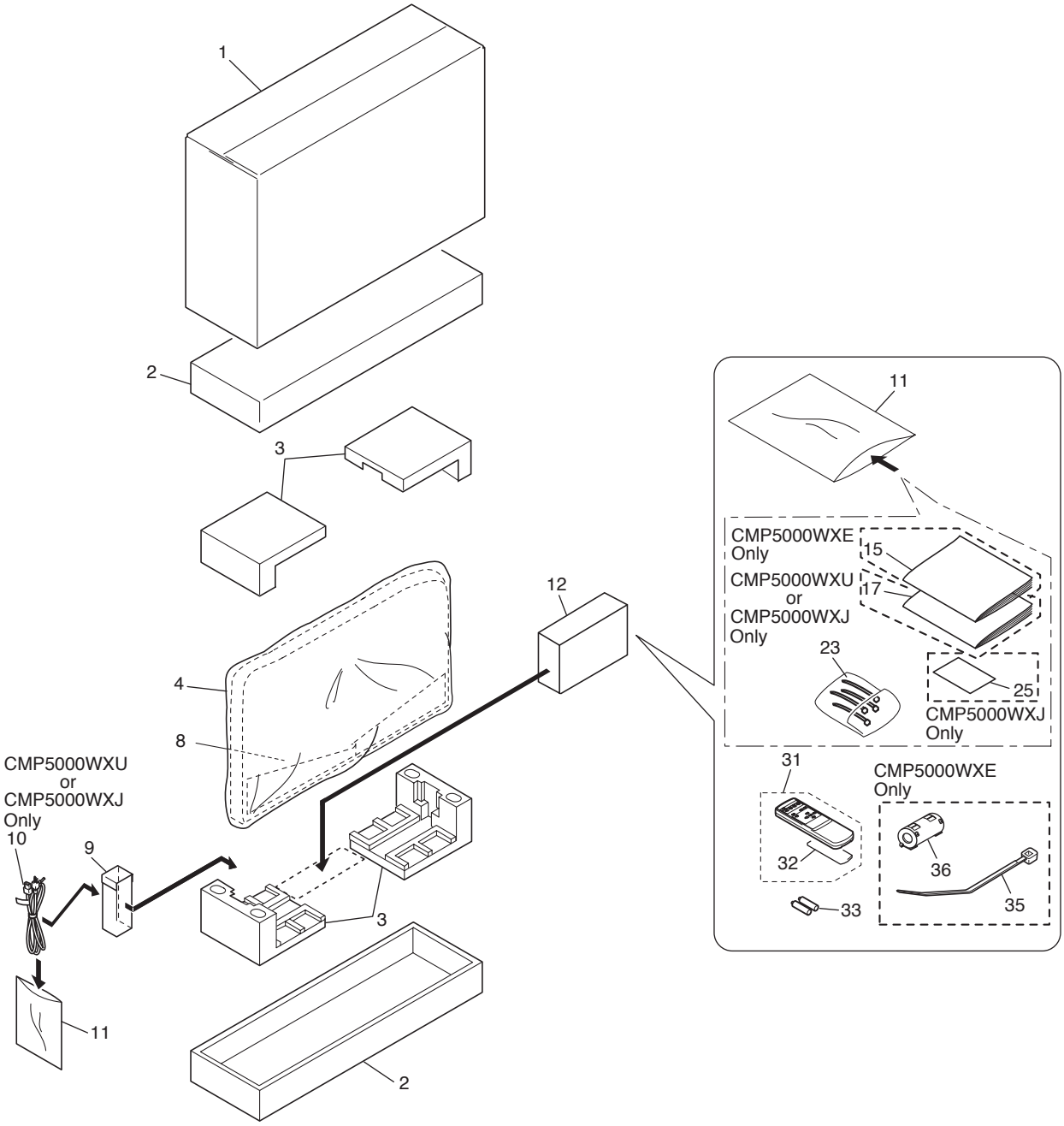
MEMO

2. EXPLODED VIEWS AND PARTS LIST

NOTES: Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.
Screws adjacent to ▼ mark on the product are used for disassembly.

2.1 PLASMA DISPLAY (CMP5000WX)

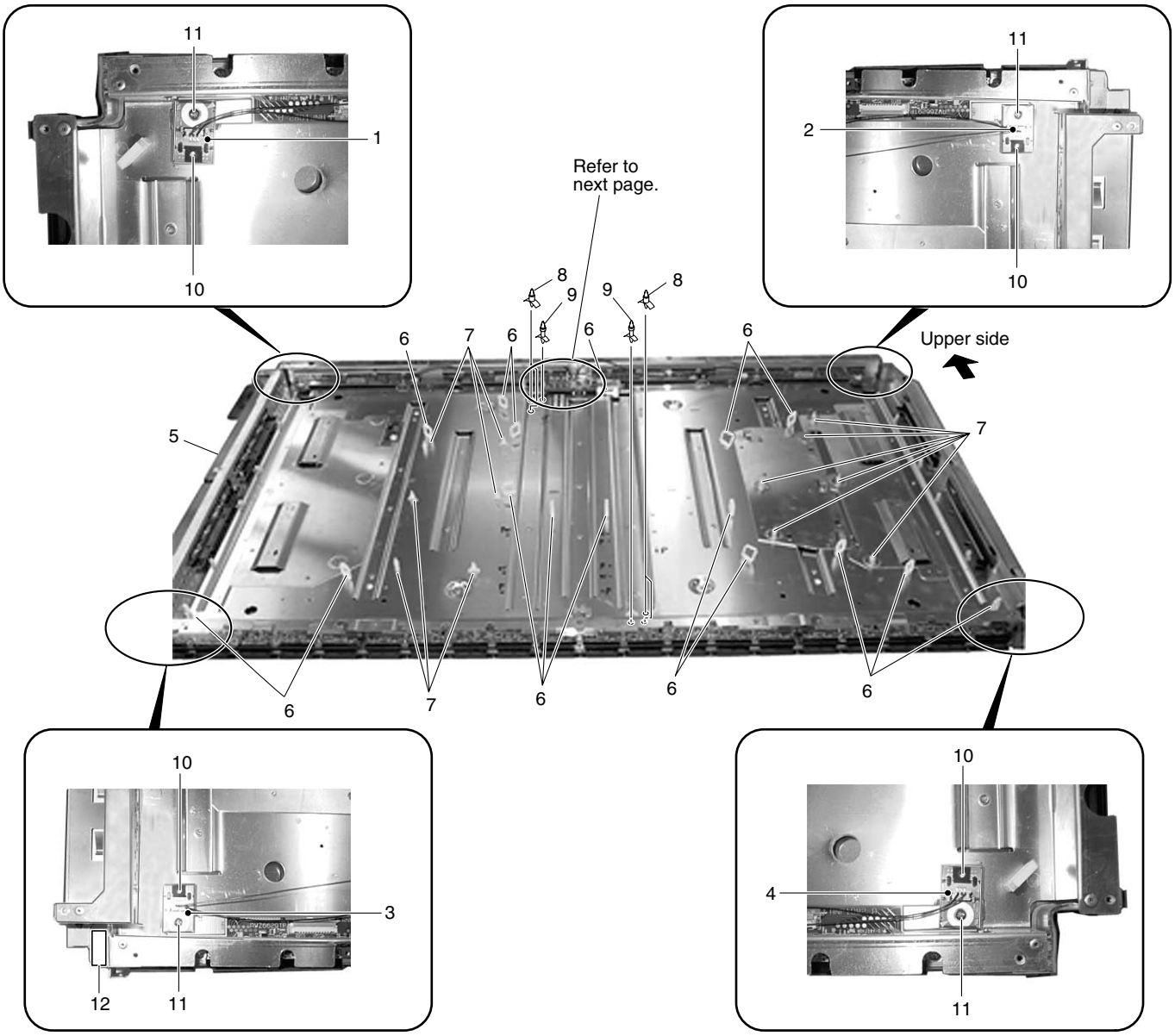
2.1.1 PACKING



(1) PACKING PARTS LIST

Mark	No.	Description		Part No.
	1	Upper Carton		AHD3143
	2	Under Carton		AHD3037
	3	Pad		AHA2280
	4	Mirror Mat		AHG1284
	5	•••••		
	6	•••••		
	7	•••••		
	8	Front Sheet		AHB1241
NSP*	9	Cord Case		AHC1037
⚠	10	Power Cord	CMP5000WXU	ADG1178
			CMP5000WXJ	ADG1171
	11	Vinyl Bag		AHG1310
NSP*	12	Accessory Case		AHC1036
	13	•••••		
	14	•••••		
	15	User Manual (Spanish/Italian/English/French/German)		ARE1364
	16	•••••		
	17	User Manual (Japanese/English/French)		ARD1050
	18	•••••		
	19	•••••		
	20	•••••		
	21	•••••		
	22	•••••		
NSP*	23	Binder Assy (Speed Clampx2, Bead Bandx2)		AEC1758
	24	•••••		
NSP	25	Warranty Card		ARY1102
	26	•••••		
	27	•••••		
	28	•••••		
	29	•••••		
	30	•••••		
	31	Remote Control Unit		AXD1469
NSP*	32	Battery Cover		AZN2462
NSP	33	Dry Cell Battery (R6P, AA)		AEX1026
	34	•••••		
NSP*	35	Cable tie		
NSP*	36	Ferrite Core		ATX1031

2.1.2 UNDER LAYER SECTION (1)



UNDER LAYER SECTION (1) PARTS LIST

Mark	No.	Description	Part No.
NSP*	1	CLAMP A Assy	AWZ6650
NSP*	2	CLAMP B Assy	AWZ6651
NSP*	3	CLAMP C Assy	AWZ6652
NSP*	4	CLAMP D Assy	AWZ6653
	5	Service Panel Assy	AWU1040

Mark	No.	Description	Part No.
NSP*	6	Wire Saddle	AEC1878
NSP*	7	Circuit Board Spacer	AEC1872
NSP*	8	Circuit Board Spacer	AEC1873
NSP	9	PCB Spacer	AEC1253
NSP*	10	Locking Card Spacer	AEC1736
NSP*	11	Screw	ABA1301
NSP*	12	V Cushion	AED1205

■ Caution in Replacement of Panel Chassis (50) Assy

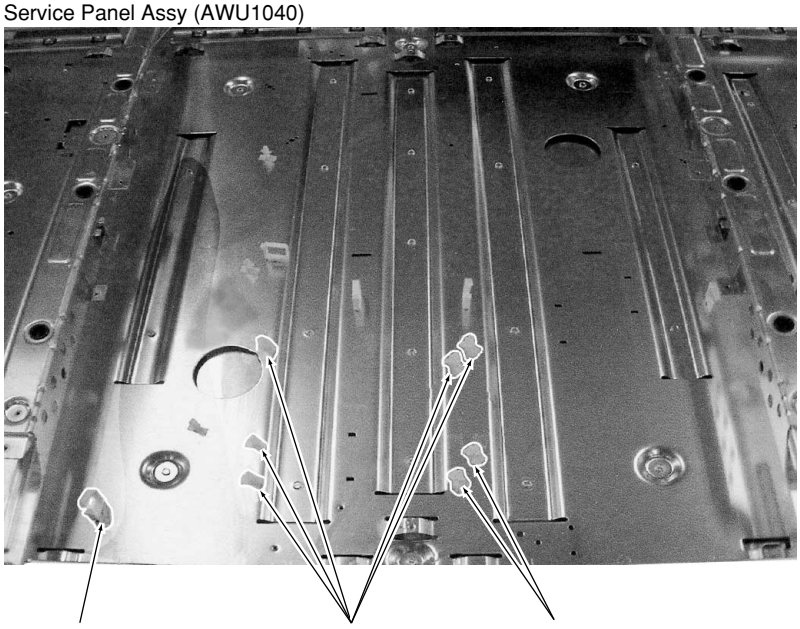
Service Panel Assy (AWU1040) is all common use parts of for business, public use and module.
Supply it by the state that installed Circuit Board Spacer (AEC1872) and Wire Saddle (AEC1878)as follows.
Therefore need to remove it in accordance with model.

Confirm character carved a seal near the parts, and remove it.

P : Public exclusive use
W : Module exclusive use
PW : Common use of public use and module

∗ In case of this unit, all the parts carved a seal of character removes it.

Service Panel Assy (AWU1040)

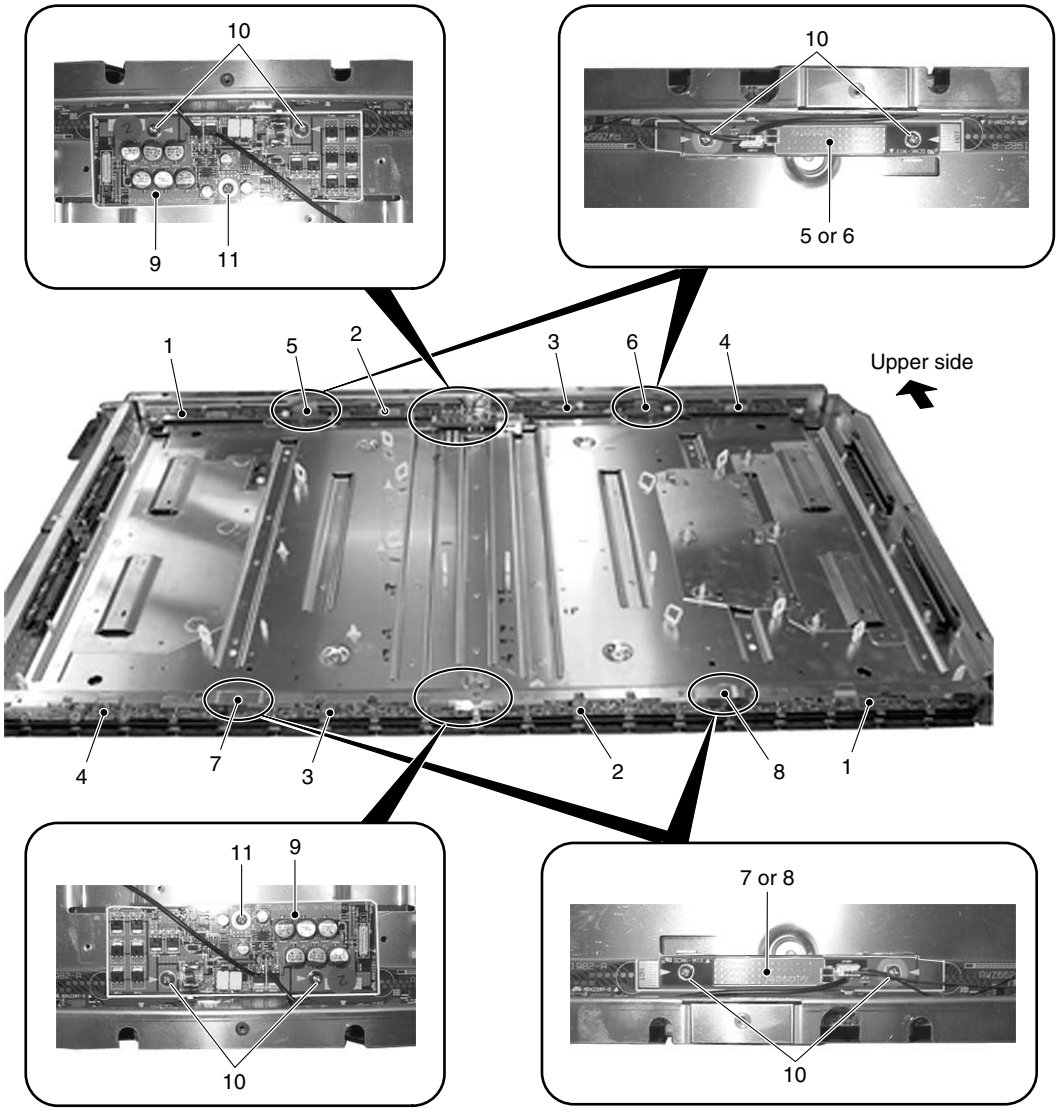


Wire Saddle (AEC1878) (There is marking of "P" nearby.)

Circuit Board Spacer (AEC1872)

Circuit Board Spacer (AEC1872)

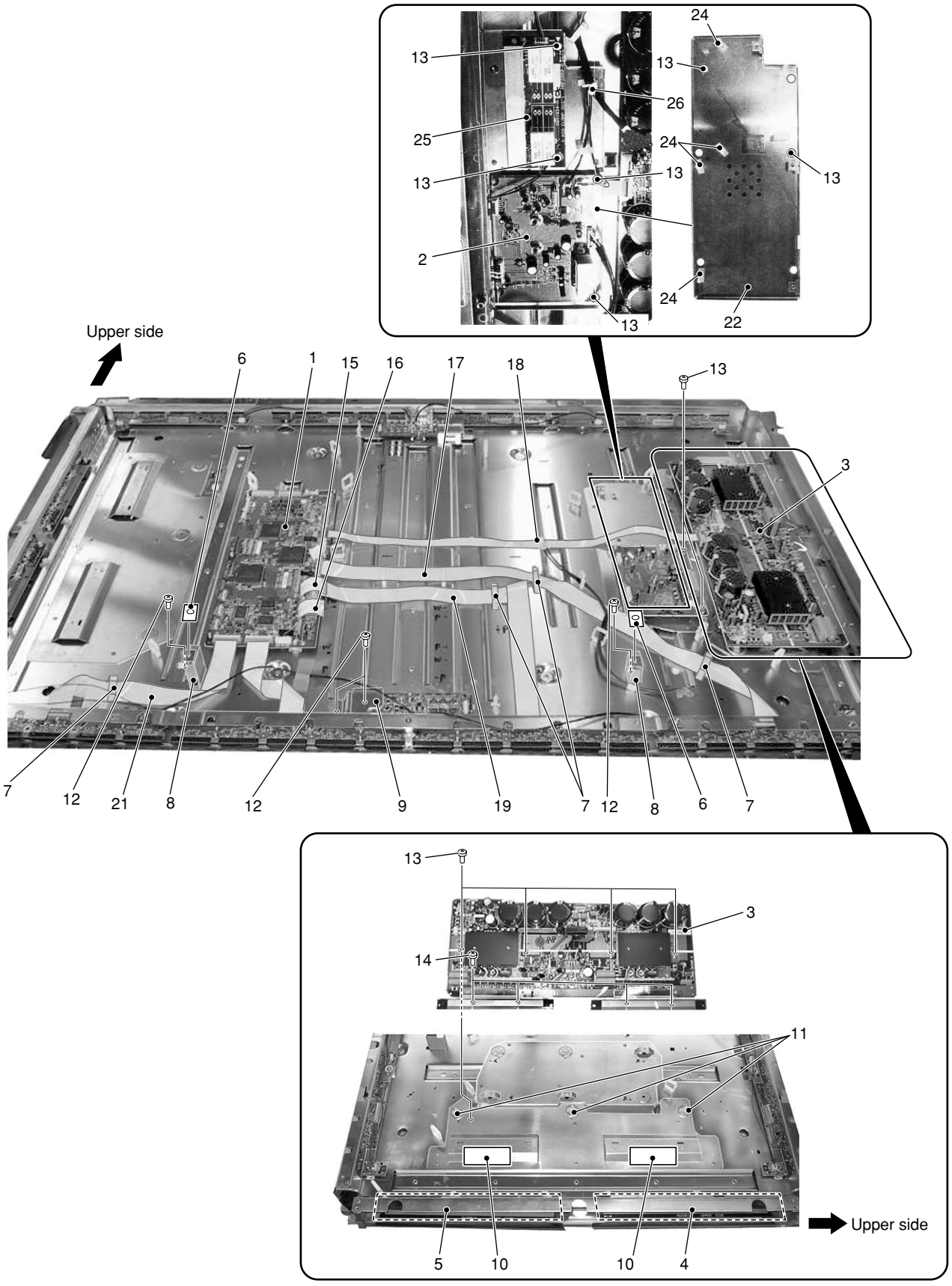
2.1.3 UNDER LAYER SECTION (2)



UNDER LAYER SECTION (2) PARTS LIST

Mark	No.	Description	Part No.
NSP	1	ADR CONNECT A Assy	AWZ6626
NSP	2	ADR CONNECT B Assy	AWZ6627
NSP	3	ADR CONNECT C Assy	AWZ6628
NSP	4	ADR CONNECT D Assy	AWZ6629
NSP*	5	BRIDGE A Assy	AWZ6620
NSP*	6	BRIDGE B Assy	AWZ6621
NSP*	7	BRIDGE C Assy	AWZ6622
NSP*	8	BRIDGE D Assy	AWZ6623
NSP*	9	RESONANCE Assy	AWZ6630
NSP*	10	Screw	ABA1301
NSP*	11	Screw	VBB30P100FNI

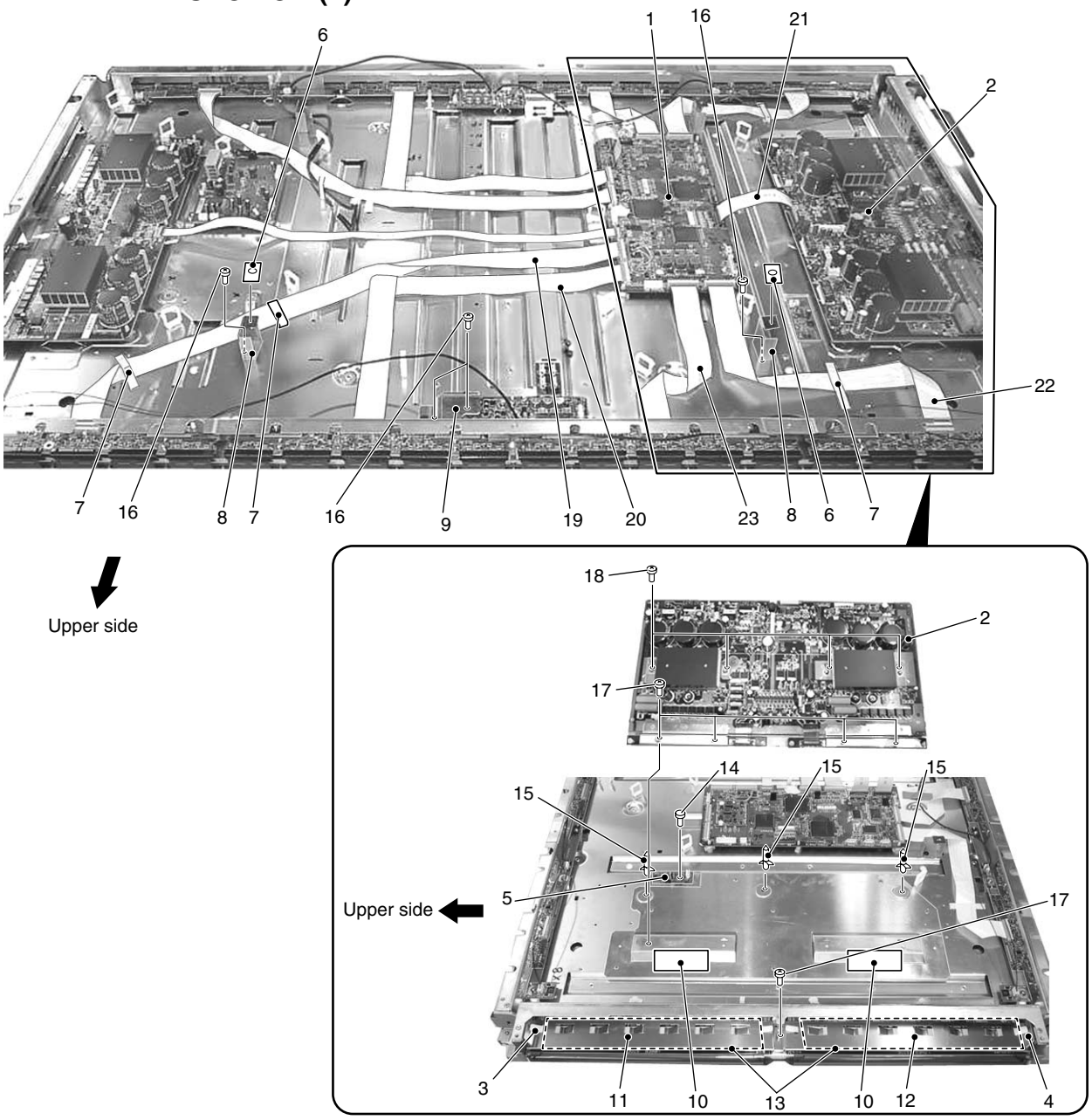
2.1.4 UNDER LAYER SECTION (3)



UNDER LAYER SECTION (3) PARTS LIST

Mark	No.	Description	Part No.
	1	DIGITAL VIDEO Assy	AWV1903
	2	MX AUDIO Assy	AWZ6644
	3	X DRIVE Assy	AWV1901
NSP*	4	X CONNECTOR (A) Assy	AWZ6618
NSP*	5	X CONNECTOR (B) Assy	AWZ6619
NSP*	6	Insulation Sheet	AMR3263
NSP*	7	Flat Clamp	AEC1879
NSP	8	Metal Fittings	ANG2464
NSP	9	Heat Sink	ANH1594
NSP*	10	Coil Silicone Sheet	AEH1048
NSP*	11	Circuit Board Spacer	AEC1872
NSP*	12	Screw	ABZ30P060FMC
NSP*	13	Screw	VBB30P100FNI
NSP*	14	Screw	PMB30P060FNI
NSP*	15	J201 Flexible Flat Cable	ADD1183
NSP*	16	J202 Flexible Flat Cable	ADD1183
NSP*	17	J209 Flexible Flat Cable	ADD1191
NSP*	18	J204 Flexible Flat Cable	ADD1196
NSP*	19	J210 Flexible Flat Cable	ADD1190
NSP*	20	J211 Flexible Flat Cable	ADD1186
NSP*	21	J212 Flexible Flat Cable	ADD1188
NSP	22	Holder	ANG2498
	23	• • • • •	
NSP*	24	Circuit Board Spacer	AEC1872
	25	NONE	
NSP*	26	Niplocker	BEC1136

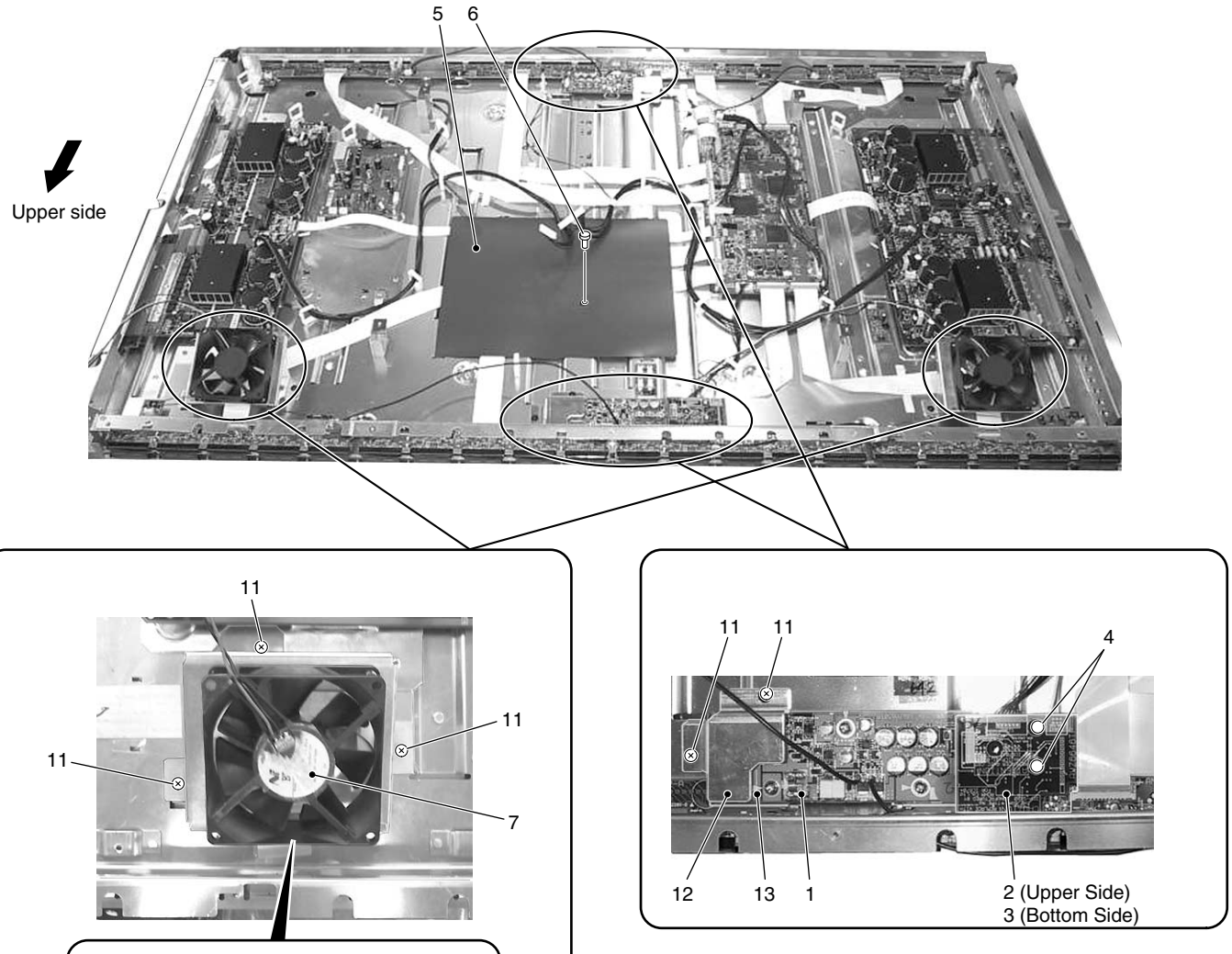
2.1.5 UNDER LAYER SECTION (4)



UNDER LAYER SECTION (4) PARTS LIST

Mark	No.	Description	Part No.
	1	DIGITAL VIDEO Assy	AWV1903
	2	Y DRIVE Assy	AWZ6645
NSP*	3	SCAN (A) Assy	AWZ6616
NSP*	4	SCAN (B) Assy	AWZ6617
	5	THERMAL SENSOR Assy	AWZ6696
NSP*	6	Insulation Sheet	AMR3263
NSP*	7	Flat Clamp	AEC1879
NSP*	8	Metal Fittings	ANG2464
NSP*	9	Heat Sink	ANH1594
NSP*	10	Coil Silicone Sheet	AEH1048
NSP*	11	Scan IC Spring (L)	ABK1026
NSP*	12	Scan IC Spring (R)	ABK1027
NSP*	13	Scan Insulation Sheet	AMR3271
NSP*	14	Rivet	BEC1066
NSP*	15	Circuit Board Spacer	AEC1872
NSP*	16	Screw	ABZ30P060FMC
NSP*	17	Screw	PMB30P060FNI
NSP*	18	Screw	VBB30P100FNI
NSP*	19	J208 Flexible Flat Cable	ADD1191
NSP*	20	J207 Flexible Flat Cable	ADD1190
NSP*	21	J203 Flexible Flat Cable	ADD1184
NSP*	22	J205 Flexible Flat Cable	ADD1189
NSP*	23	J206 Flexible Flat Cable	ADD1187

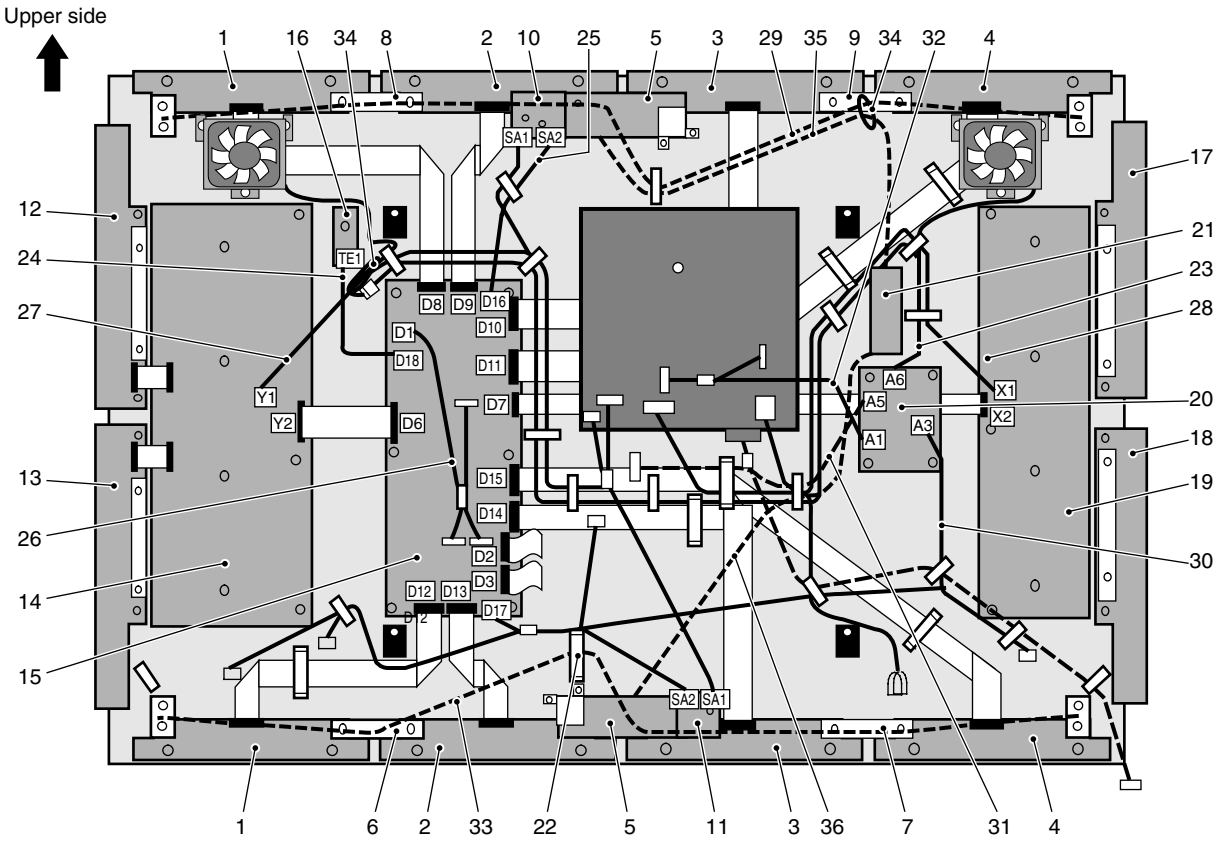
2.1.6 UNDER LAYER SECTION (5)



UNDER LAYER SECTION (5) PARTS LIST

Mark	No.	Description	Part No.
NSP*	1	RESONANCE Assy	AWZ6691
	2	SUB ADDRESS A Assy	AWZ6689
	3	SUB ADDRESS B Assy	AWZ6690
NSP*	4	Circuit Board Spacer	AEC1873
NSP*	5	Power Sheet	AMR3291
NSP*	6	Rivet	BEC1066
NSP*	7	Fan Label	AAX2785
NSP	8	Fan Metal	ANG2465
	9	Fan Motor	AXM1040
NSP*	10	Screw	PPZ50P100FZK
NSP*	11	Screw	ABZ30P060FMC
NSP	12	Heatsink	ANH1594
NSP*	13	Silicone Sheet	AEH1039

2.1.7 UNDER LAYER SECTION (6)

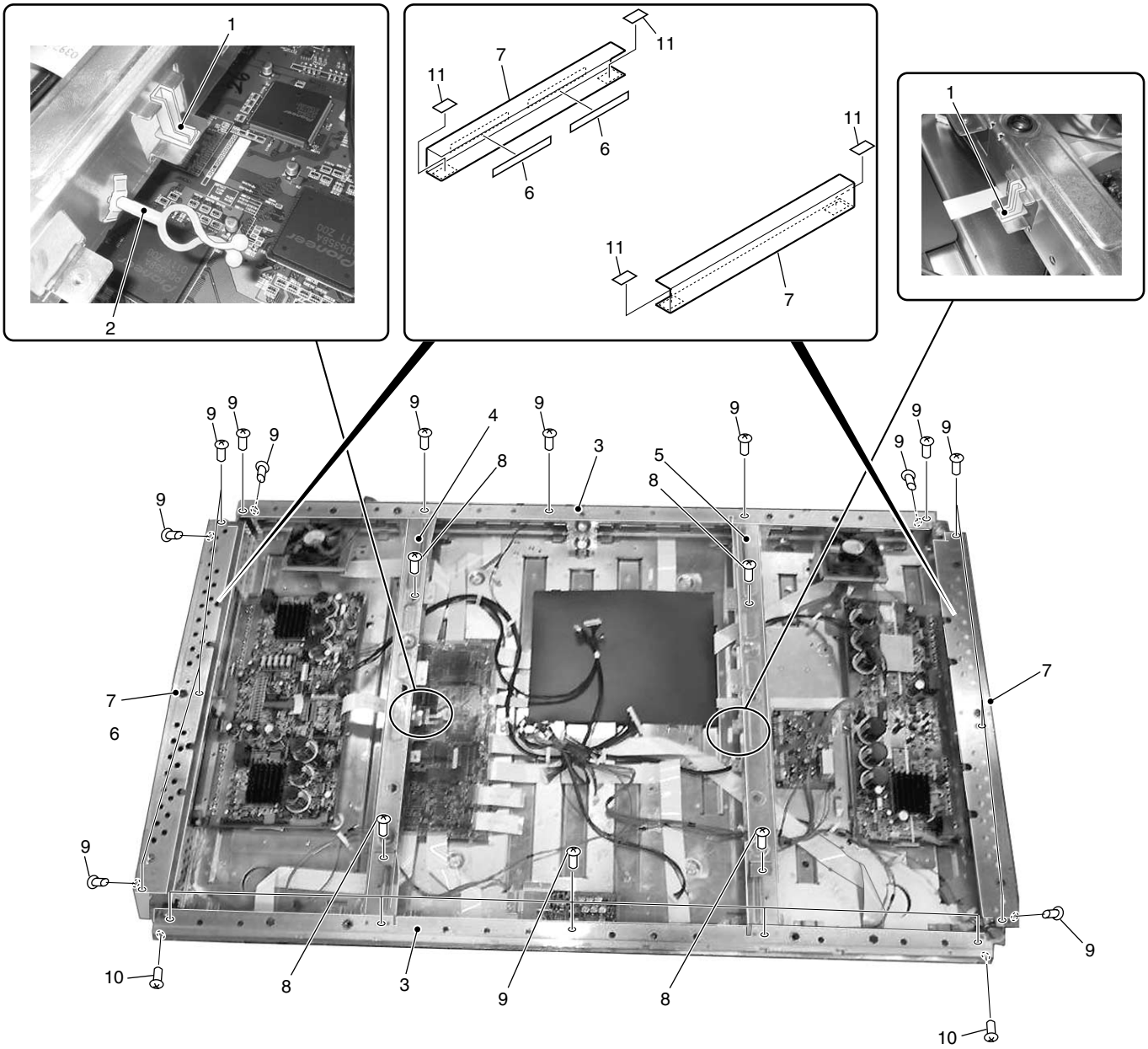


UNDER LAYER SECTION (6) PARTS LIST

Mark	No.	Description	Part No.
NSP	1	ADR CONNECT A Assy	AWZ6626
NSP	2	ADR CONNECT B Assy	AWZ6627
NSP	3	ADR CONNECT C Assy	AWZ6628
NSP	4	ADR CONNECT D Assy	AWZ6629
NSP*	5	RESONANCE Assy	AWZ6691
NSP*	6	BRIDGE A Assy	AWZ6620
NSP*	7	BRIDGE B Assy	AWZ6621
NSP*	8	BRIDGE C Assy	AWZ6622
NSP*	9	BRIDGE D Assy	AWZ6623
	10	SUB ADDRESS A Assy	AWZ6689
	11	SUB ADDRESS B Assy	AWZ6690
NSP	12	SCAN (A) Assy	AWZ6616
NSP	13	SCAN (B) Assy	AWZ6617
	14	Y DRIVE Assy	AWZ6645
	15	DIGITAL VIDEO Assy	AWV1903
	16	THERMAL SENSOR Assy	AWZ6696
NSP*	17	X CONNECTOR (A) Assy	AWZ6618
NSP*	18	X CONNECTOR (B) Assy	AWZ6619
	19	X DRIVE Assy	AWV1901
	20	MX AUDIO Assy	AWZ6644

Mark	No.	Description	Part No.
	21	NONE	
NSP*	22	Flat Clamp	AEC1879
NSP*	23	J115 3P Housing Wire	ADX2705
NSP*	24	J110 3P Housing Wire	ADX2704
NSP*	25	J108 8P Housing Wire	ADX2701
NSP*	26	J101 Wire F	ADX2695
NSP*	27	J102 Wire E	ADX2694
NSP*	28	J103 13P Housing Wire	ADX2700
NSP*	29	J116 4P Housing SP Wire	ADX2725
NSP*	30	J109 Wire G	ADX2696
NSP*	31	J111 Wire I	ADX2698
NSP*	32	J104 Wire H	ADX2697
NSP*	33	J117 4P Housing SP Wire	ADX2725
NSP*	34	Binder	AEC-093
NSP*	35	J118 5P Housing Wire	ADX2754
NSP*	36	J119 5P Housing Wire	ADX2755

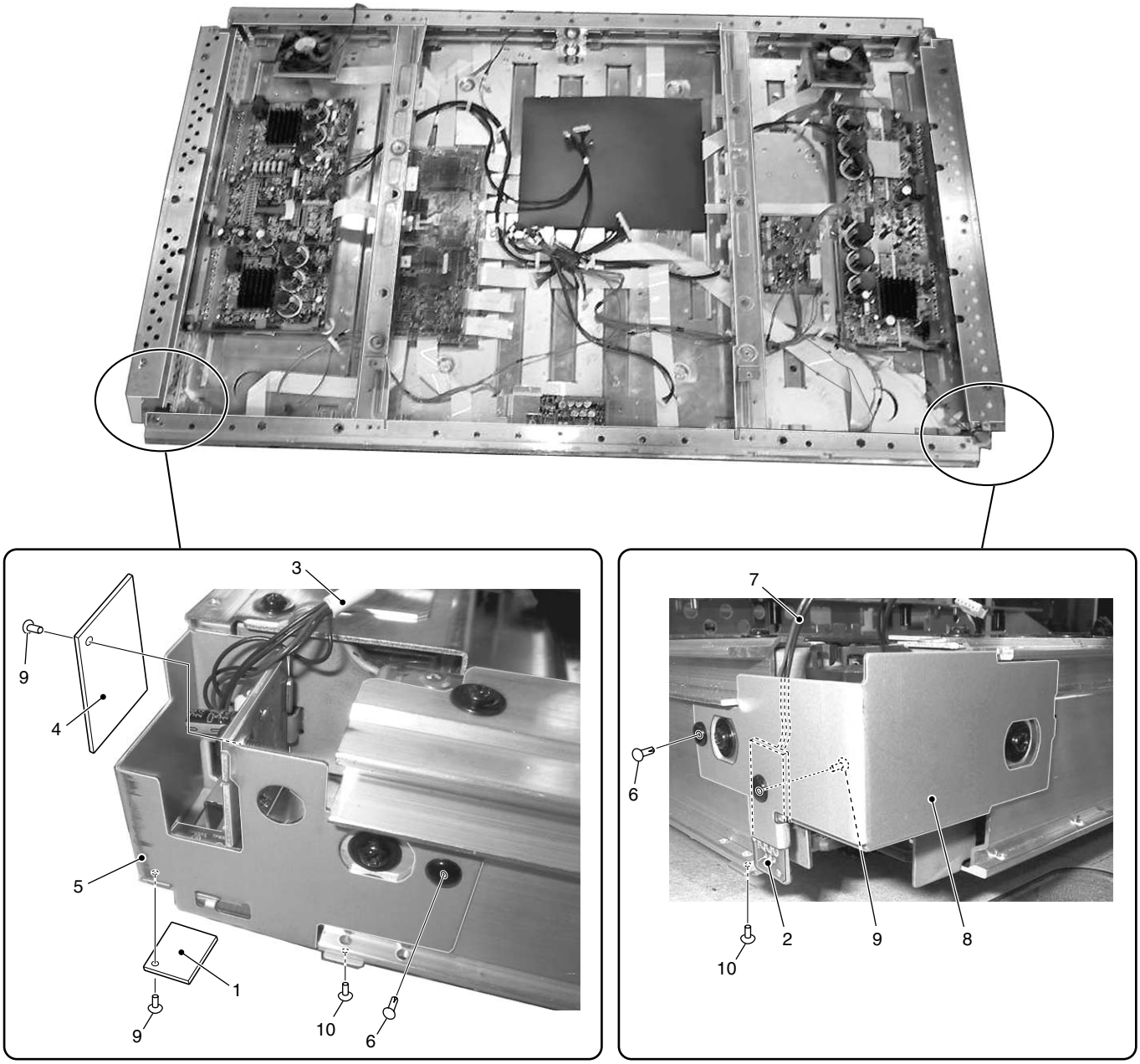
2.1.8 MIDDLE LAYER SECTION (1)



MIDDLE LAYER SECTION (1) PARTS LIST

Mark	No.	Description	Part No.
NSP*	1	Card Corner Holder	BEC1144
NSP*	2	Niplocker	BEC1136
NSP	3	Front Chassis H	ANA1683
NSP	4	Sub Frame L	ANG2455
NSP	5	Sub Frame R	ANG2456
NSP*	6	FPC Cushion	AEB1370
NSP	7	Front Chassis V	ANA1661
NSP*	8	Screw	ABA1283
NSP*	9	Screw	ABA1294
NSP*	10	Screw	BMZ30P060FMC
NSP*	11	V Cushion	AED1205

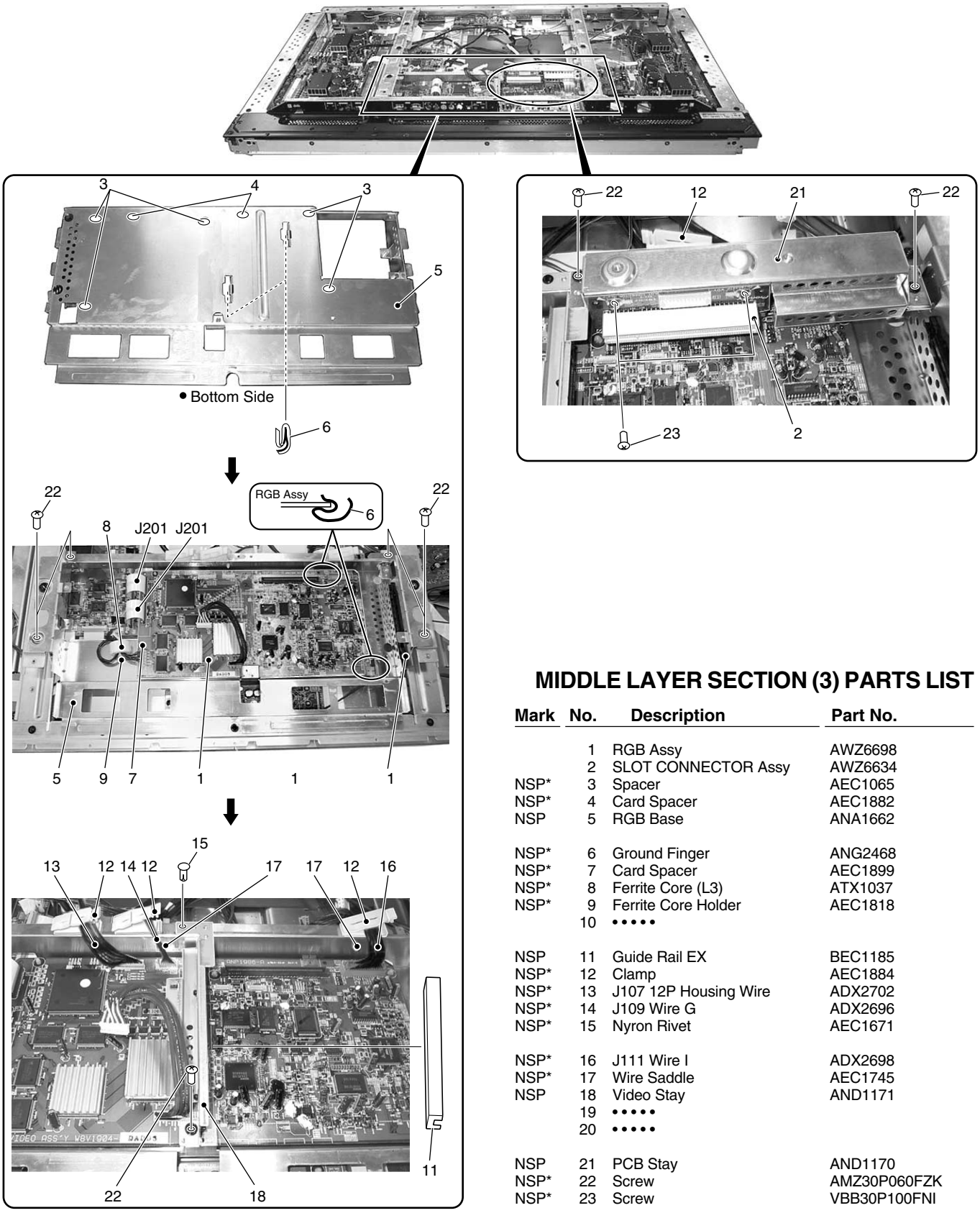
2.1.9 MIDDLE LAYER SECTION (2)



MIDDLE LAYER SECTION (2) PARTS LIST

Mark	No.	Description	Part No.
	1	IR Assy	AWZ6643
	2	MX LED Assy	AWZ6642
NSP*	3	J113 Wire J	ADX2699
	4	KEY CONNECTOR Assy	AWZ6695
NSP	5	IR Holder	ANG2494
NSP*	6	Nyron Rivet	AEC1671
NSP*	7	J111 Wire I	ADX2698
NSP	8	Switch Holder	ANG2493
NSP*	9	Screw	BMZ30P040FMC
NSP*	10	Screw	ABZ30P050FZK

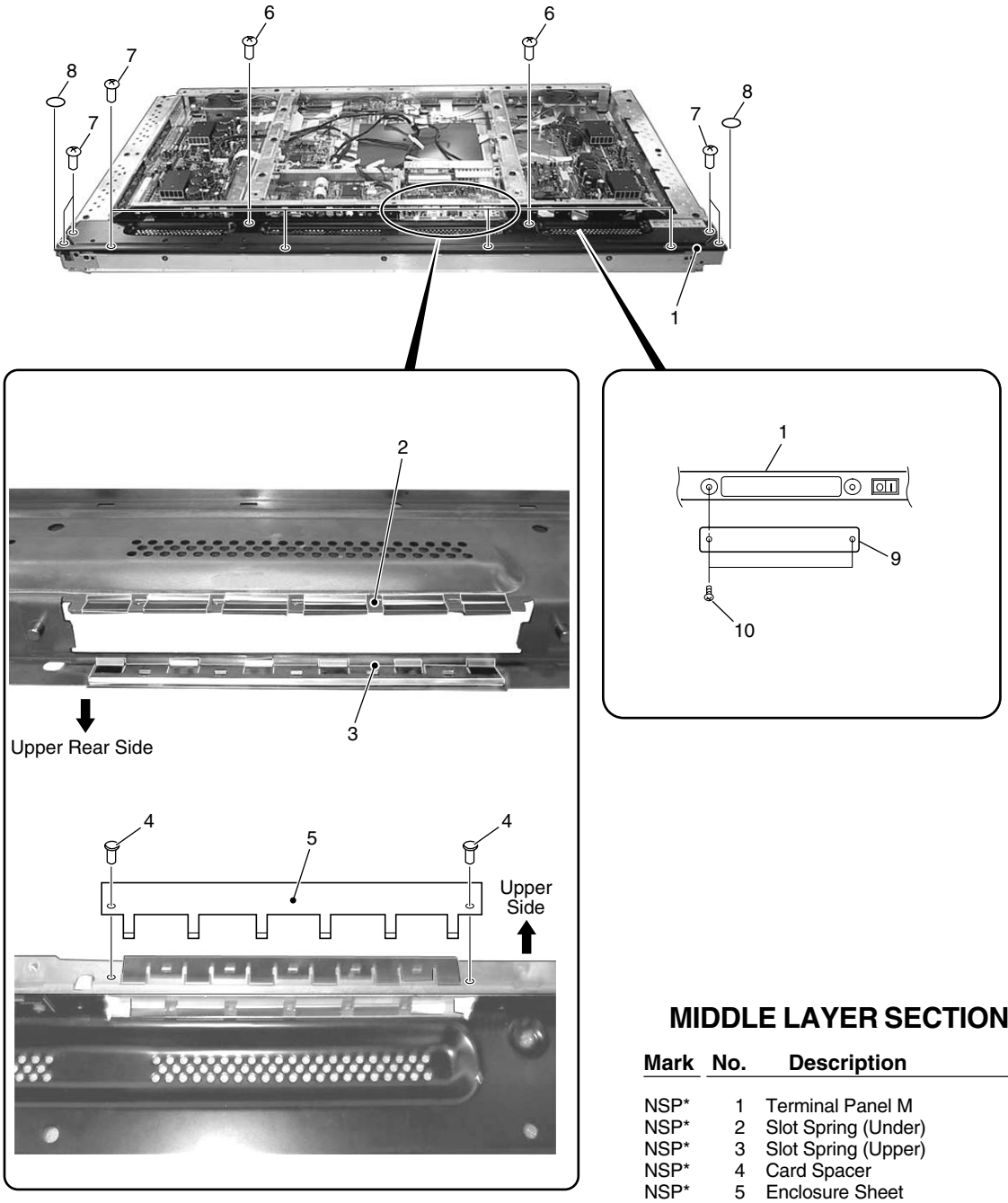
2.1.10 MIDDLE LAYER SECTION (3)



MIDDLE LAYER SECTION (3) PARTS LIST

Mark	No.	Description	Part No.
	1	RGB Assy	AWZ6698
	2	SLOT CONNECTOR Assy	AWZ6634
NSP*	3	Spacer	AEC1065
NSP*	4	Card Spacer	AEC1882
NSP	5	RGB Base	ANA1662
NSP*	6	Ground Finger	ANG2468
NSP*	7	Card Spacer	AEC1899
NSP*	8	Ferrite Core (L3)	ATX1037
NSP*	9	Ferrite Core Holder	AEC1818
	10	•••••	
NSP	11	Guide Rail EX	BEC1185
NSP*	12	Clamp	AEC1884
NSP*	13	J107 12P Housing Wire	ADX2702
NSP*	14	J109 Wire G	ADX2696
NSP*	15	Nyron Rivet	AEC1671
NSP*	16	J111 Wire I	ADX2698
NSP*	17	Wire Saddle	AEC1745
NSP	18	Video Stay	AND1171
	19	•••••	
	20	•••••	
NSP	21	PCB Stay	AND1170
NSP*	22	Screw	AMZ30P060FZK
NSP*	23	Screw	VBB30P100FNI

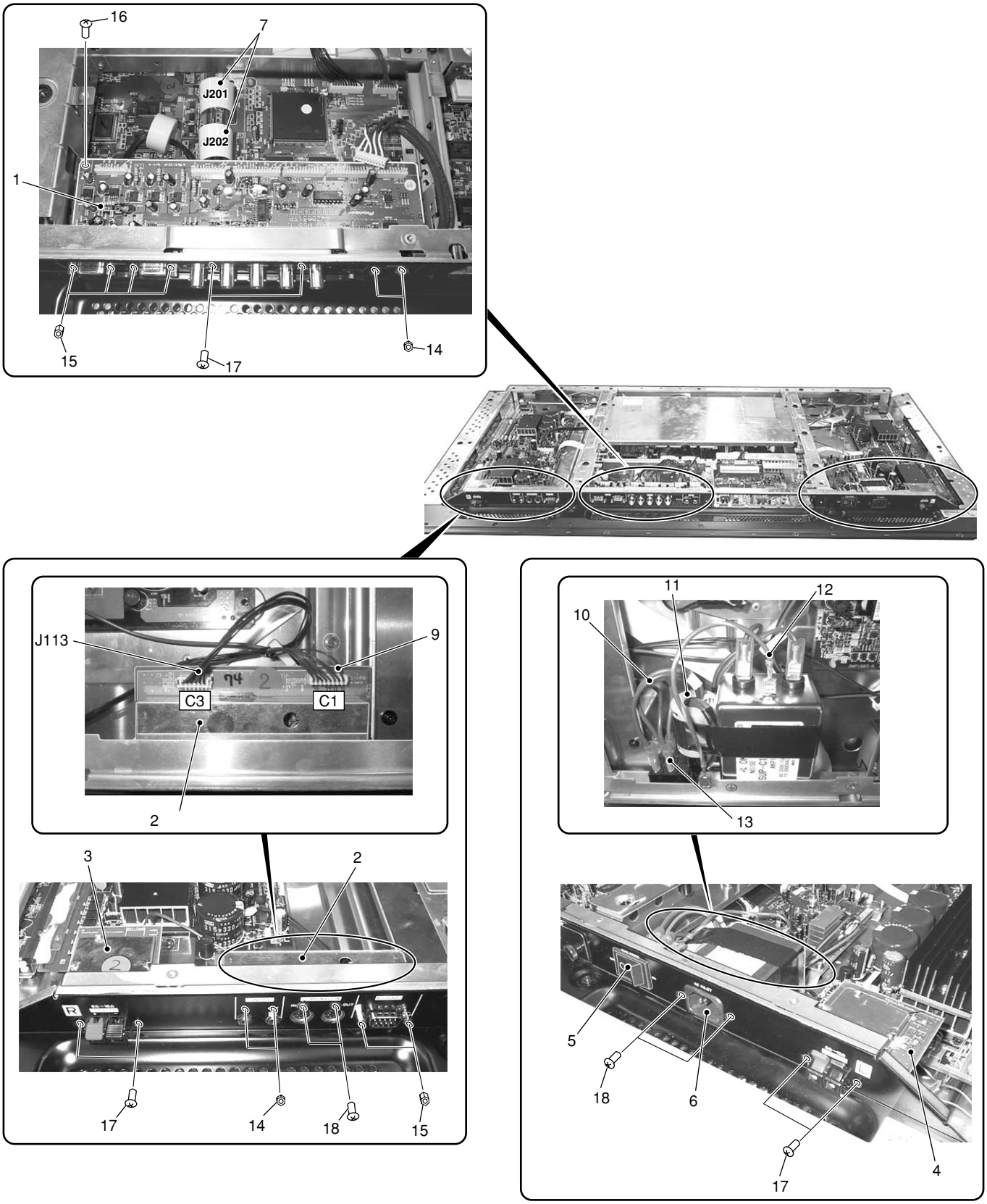
2.1.11 MIDDLE LAYER SECTION (4)



MIDDLE LAYER SECTION (4) PARTS LIST

Mark	No.	Description	Part No.
NSP*	1	Terminal Panel M	ANG2452
NSP*	2	Slot Spring (Under)	ABK1028
NSP*	3	Slot Spring (Upper)	ABK1024
NSP*	4	Card Spacer	AEC1898
NSP*	5	Enclosure Sheet	AMR3281
NSP*	6	Screw	AMZ30P060FZK
NSP*	7	Screw	TBZ40P080FZK
NSP*	8	Rear Corner Label	AAX2862
NSP*	9	Expansion Slot Cover	ANG2463
NSP*	10	Screw	BMZ30P060FZK

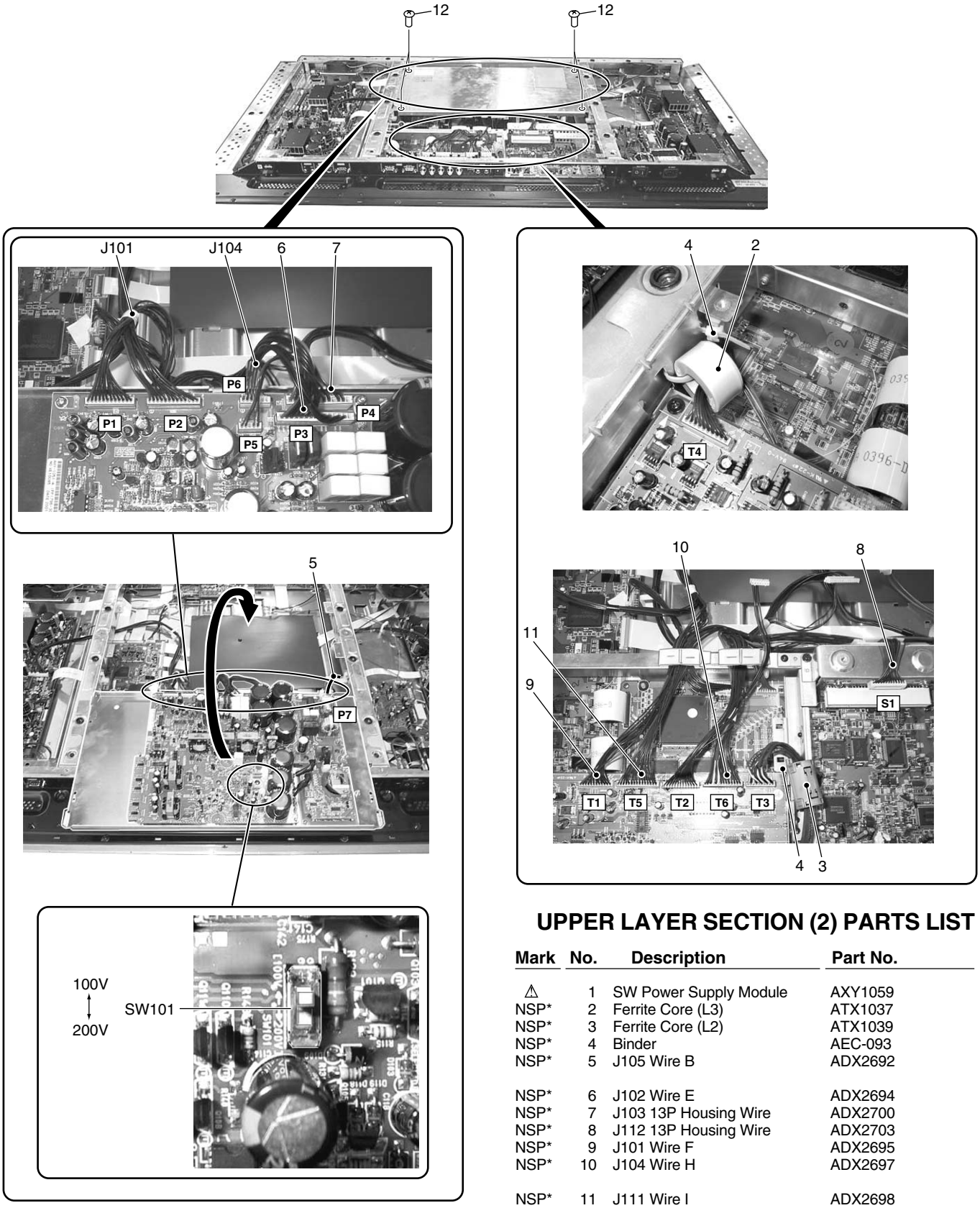
2.1.12 UPPER LAYER SECTION (1)



UPPER LAYER SECTION (1) PARTS LIST

Mark	No.	Description	Part No.
	1	I/O Assy	AWZ6631
	2	CONTROL Assy	AWZ6633
	3	SP OUT R Assy	AWZ6636
	4	SP OUT L Assy	AWZ6635
NSP*⚠	5	Power Switch (S1)	BSM1006
NSP*⚠	6	AC Inlet with Filter (CN1)	AKP1223
NSP*	7	J201, J202 Flexible Cable	ADD1183
	8	•••••	
NSP*	9	J109 Wire G	ADX2696
NSP*	10	J106 Wire C	ADX2693
NSP*	11	Ferrite Core (L1)	ATX1032
NSP*	12	J114 Earth Wire	ADX2709
NSP*	13	J105 Wire B	ADX2692
NSP*	14	Hexagonal Nut	ABN1035
NSP*	15	Hexagonal Head Screw	BBA1051
NSP*	16	Screw	PMB30P060FNI
NSP*	17	Screw	BPZ30P080FZK
NSP*	18	Screw	BMZ30P060FZK

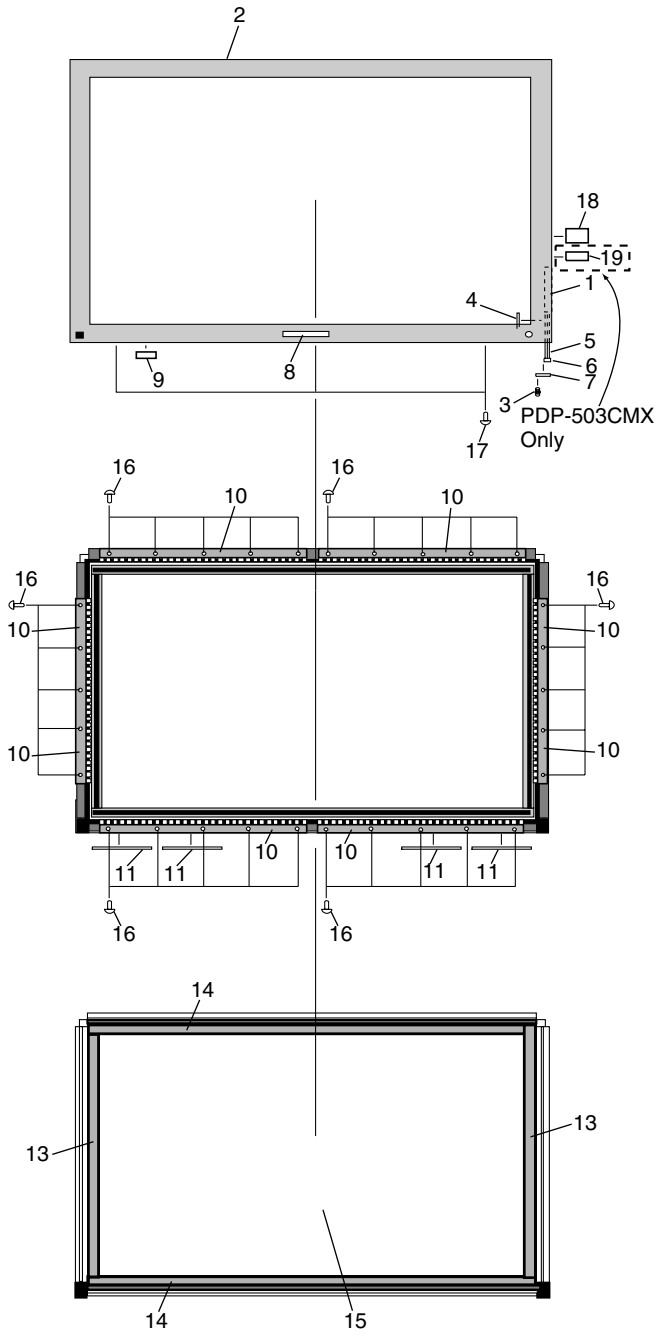
2.1.13 UPPER LAYER SECTION (2)



UPPER LAYER SECTION (2) PARTS LIST

Mark	No.	Description	Part No.
⚠	1	SW Power Supply Module	AXY1059
NSP*	2	Ferrite Core (L3)	ATX1037
NSP*	3	Ferrite Core (L2)	ATX1039
NSP*	4	Binder	AEC-093
NSP*	5	J105 Wire B	ADX2692
NSP*	6	J102 Wire E	ADX2694
NSP*	7	J103 13P Housing Wire	ADX2700
NSP*	8	J112 13P Housing Wire	ADX2703
NSP*	9	J101 Wire F	ADX2695
NSP*	10	J104 Wire H	ADX2697
NSP*	11	J111 Wire I	ADX2698
NSP*	12	Screw	AMZ30P060FZK

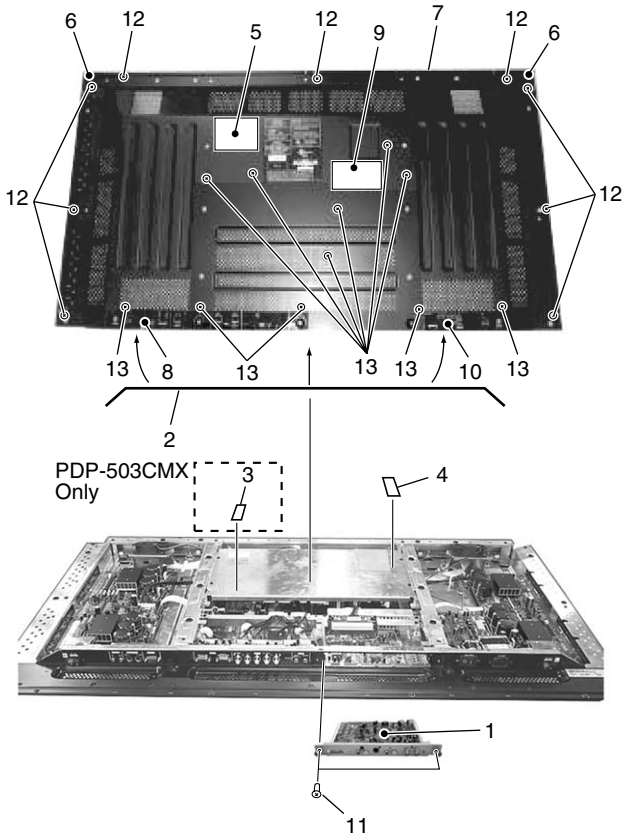
2.1.14 FRONT CASE SECTION



FRONT CASE SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	SIDE KEY Assy	AWZ6637
	2	Front Case 50 (M)	AMB2734
NSP*	3	Rivet	AEC1877
NSP*	4	Flexible Seal	AEH1036
NSP*	5	J213 Flexible Cable	ADD1195
NSP*	6	Ferrite Core (L4)	ATX1043
NSP*	7	Lead Cover (MX)	AMB2703
NSP*	8	Pioneer Badge	AAM1091
NSP	9	Serial Label	AAX2609
NSP	10	Panel Holder	ANG2466
NSP*	11	Front Spacer	AEC1896
	12	•••••	
NSP*	13	Panel Cushion V	AED1199
NSP*	14	Panel Cushion H	AED1198
	15	Protect Panel Assy	AMR3304
NSP*	16	Screw	ABZ30P050FZK
NSP*	17	Screw	VMZ30P060FZK
NSP*	18	Energy Star Label	AAX2856
NSP*	19	Display Label	AAX2836

2.1.15 REAR SECTION



REAR SECTION PARTS LIST

Mark	No.	Description	Part No.
NSP*	1	VIDEO SLOT ST1 Assy	AWV1906
NSP*	2	Gascket A	ANK1688
NSP*	3	Solder Warning Label	AAX2644
NSP*	4	Silicon Sheet P	AEH1035
NSP*	5	Cleaning Label	AAX2751
NSP*	6	Rear Corner Label	AAX2862
	7	Rear Case (50M)	ANE1597
NSP*	8	Terminal Display Label R	AAX2853
NSP*	9	Bolt Caution Label	AAX2852
NSP*	10	Terminal Display Label L	AAX2855
NSP*	11	Screw	BMZ30P060FZK
NSP*	12	Screw	TBZ40P080FZK
NSP*	13	Screw	AMZ30P060FZK

2.1.16 PANEL CHASSIS (50) ASSY (AWU1037)

PARTS LIST

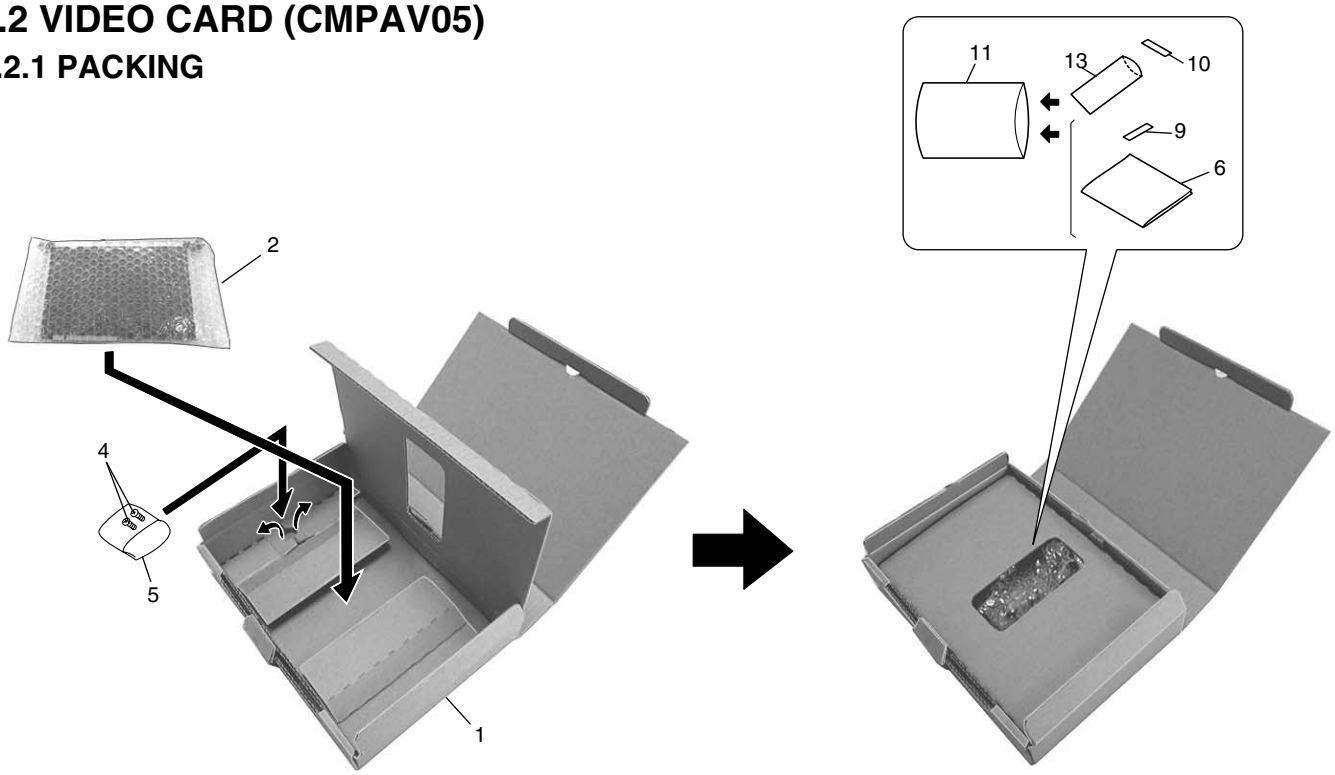
Mark	No.	Description	Part No.	
NSP		SCAN FUKUGO ASSY	AWV1898	*
NSP*		ADDRESS FUKUGO ASSY	AWV1900	*
NSP		Address Module (IC1 - IC40)	AXF1110	
NSP		FPC (0003)	ADY1065	
NSP		FPC (J0001)	ADY1066	
NSP		Chassis	ANA1655	
NSP		Base Chassis	ANA1656	
NSP		Scan Heatsink	ANH1595	
NSP		Corner Angle A	ANG2457	
NSP		Corner Angle B	ANG2458	
NSP		Tube Cover	AMR3262	
NSP*		Siricon Sheet 50	AEH1037	
NSP*		Adhesive Tape 50	AEH1038	
NSP*		Adhesive Tape B (50)	AEH1051	
NSP*		Pin Grommet	AEC1015	
NSP*		Card Spacer	AEC1889	
NSP*		Scan Siricon Sheet	AEH1040	
NSP		Plasma Panel Assy	AAV1238	
NSP*		Screw	VBB30P100FNI	

LIST OF ASSY

Mark	No.	Description	Part No.
NSP		SCAN FUKUGO ASSY	AWV1898
NSP		├ SCAN (A) ASSY	AWZ6616
NSP		├ SCAN (B) ASSY	AWZ6617
NSP		├ X CONNECTOR (A) ASSY	AWZ6618
NSP		├ X CONNECTOR (B) ASSY	AWZ6619
NSP*		├ BRIDGE A ASSY	AWZ6620
NSP*		├ BRIDGE B ASSY	AWZ6621
NSP*		├ BRIDGE C ASSY	AWZ6622
NSP*		├ BRIDGE D ASSY	AWZ6623
NSP*		├ CLAMP A ASSY	AWZ6650
NSP*		├ CLAMP B ASSY	AWZ6651
NSP*		├ CLAMP C ASSY	AWZ6652
NSP*		└ CLAMP D ASSY	AWZ6653
		ADDRESS FUKUGO ASSY	AWV1900
NSP		├ ADR CONNECT A ASSY	AWZ6626
NSP		├ ADR CONNECT B ASSY	AWZ6627
NSP		├ ADR CONNECT C ASSY	AWZ6628
NSP		├ ADR CONNECT D ASSY	AWZ6629
NSP*		└ RESONANCE ASSY	AWZ6630

2.2 VIDEO CARD (CMPAV05)

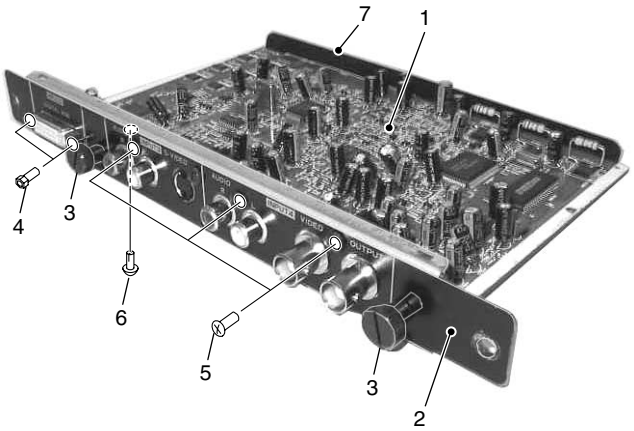
2.2.1 PACKING



PACKING PARTS LIST

Mark	No.	Description	Part No.
NSP*	1	Packing Case	AHD3096
NSP*	2	Sheet	AHG1315
	3	•••••	
NSP*	4	Screw (Accessory Screw for Installing Video Card)	BMZ30P060FZK
NSP	5	Vinyl Bag	AHG-064
NSP*	6	User Manual (Spanish/Italian/Japanese/English/French/German)	ARC1504
	7	•••••	
	8	•••••	
NSP*	9	Connector Indicator Label	AAX2854
NSP*	10	Label for Remote Control Unit	AAX2875
NSP*	11	Vinyl Bag	AHG1310
	12	•••••	
NSP	13	Vinyl Bag	AHG-195

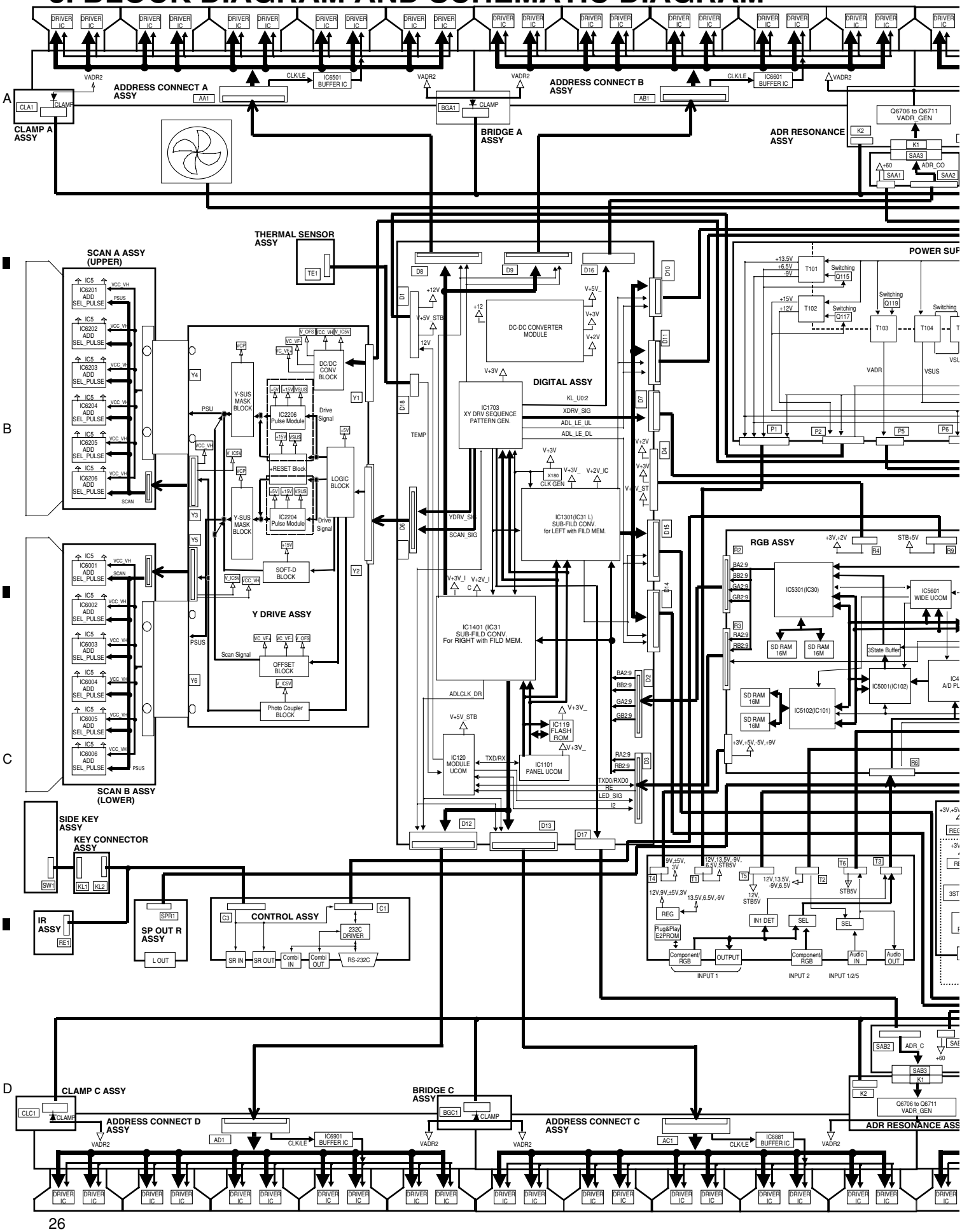
2.2.2 MAIN UNIT



MAIN UNIT PARTS LIST

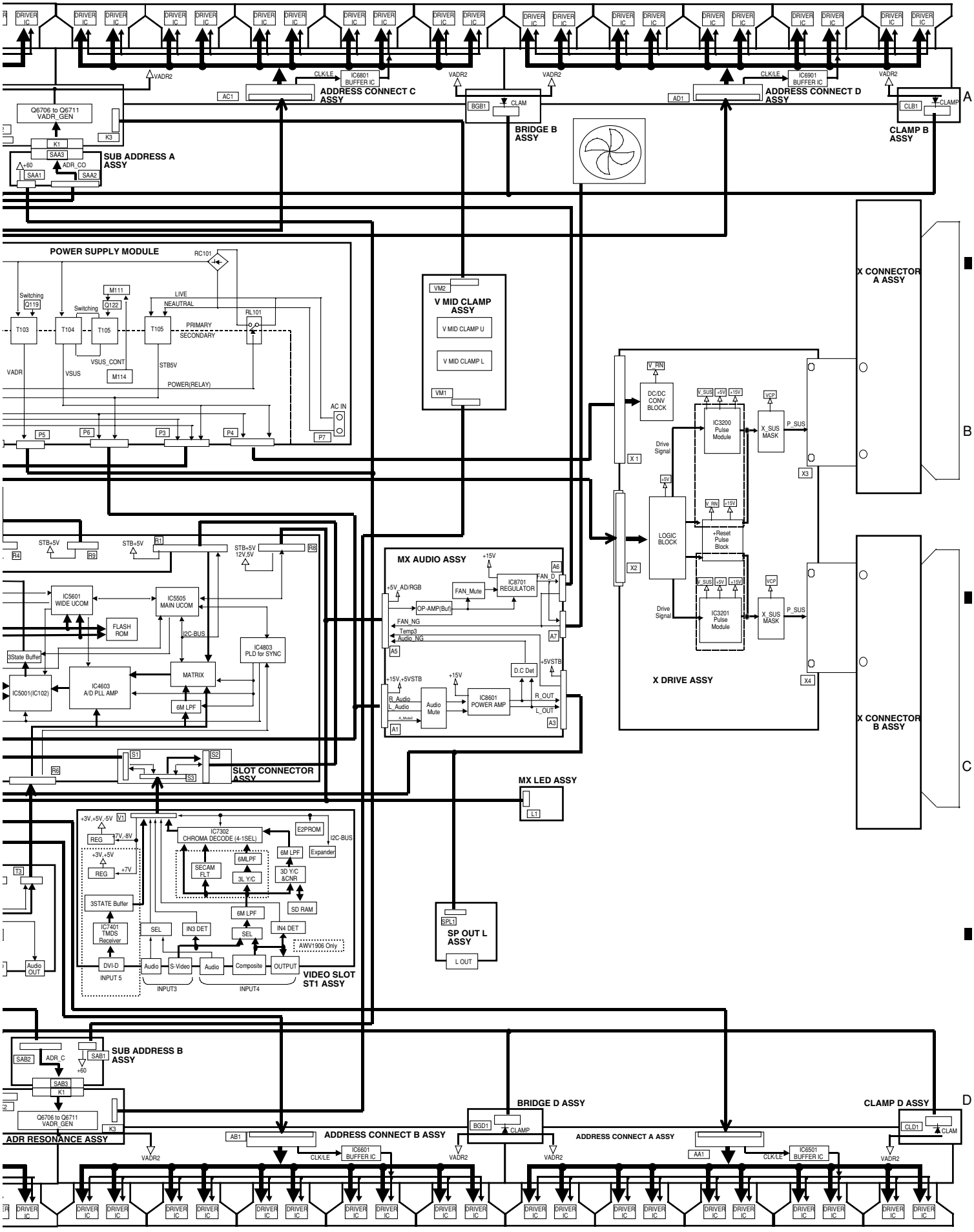
Mark	No.	Description	Part No.
NSP*	1	VIDEO SLOT ST1 Assy	AWV1906
NSP*	2	Video Terminal Panel M	ANG2461
NSP*	3	Screw	ABA1295
NSP*	4	Hexagonal Head Screw	BBA1051
NSP*	5	Screw	BPZ30P080FZK
NSP*	6	Rivet	AEP-211
NSP*	7	Sheet	AMR3282

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM



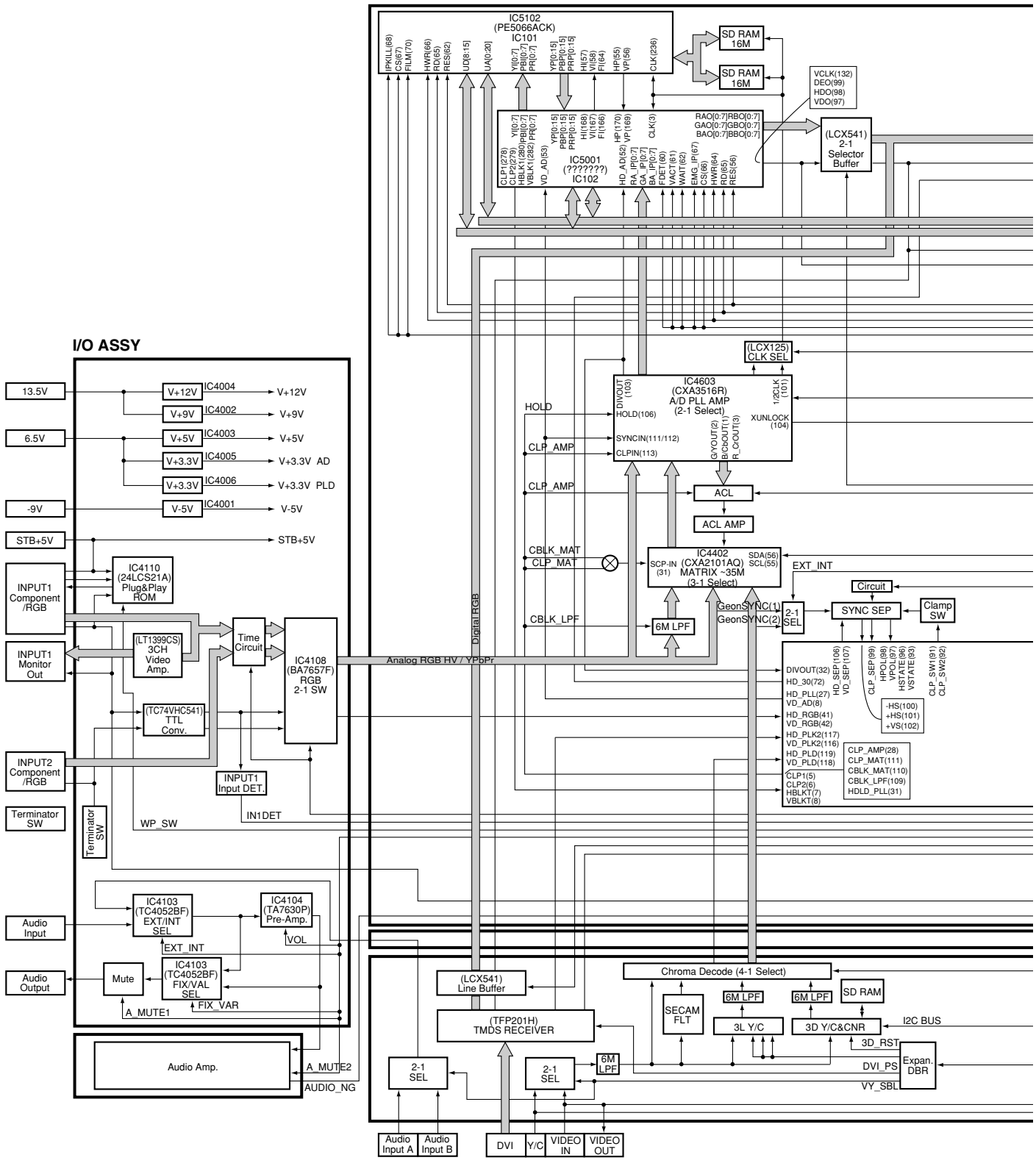
3.1 BLOCK DIAGRAM

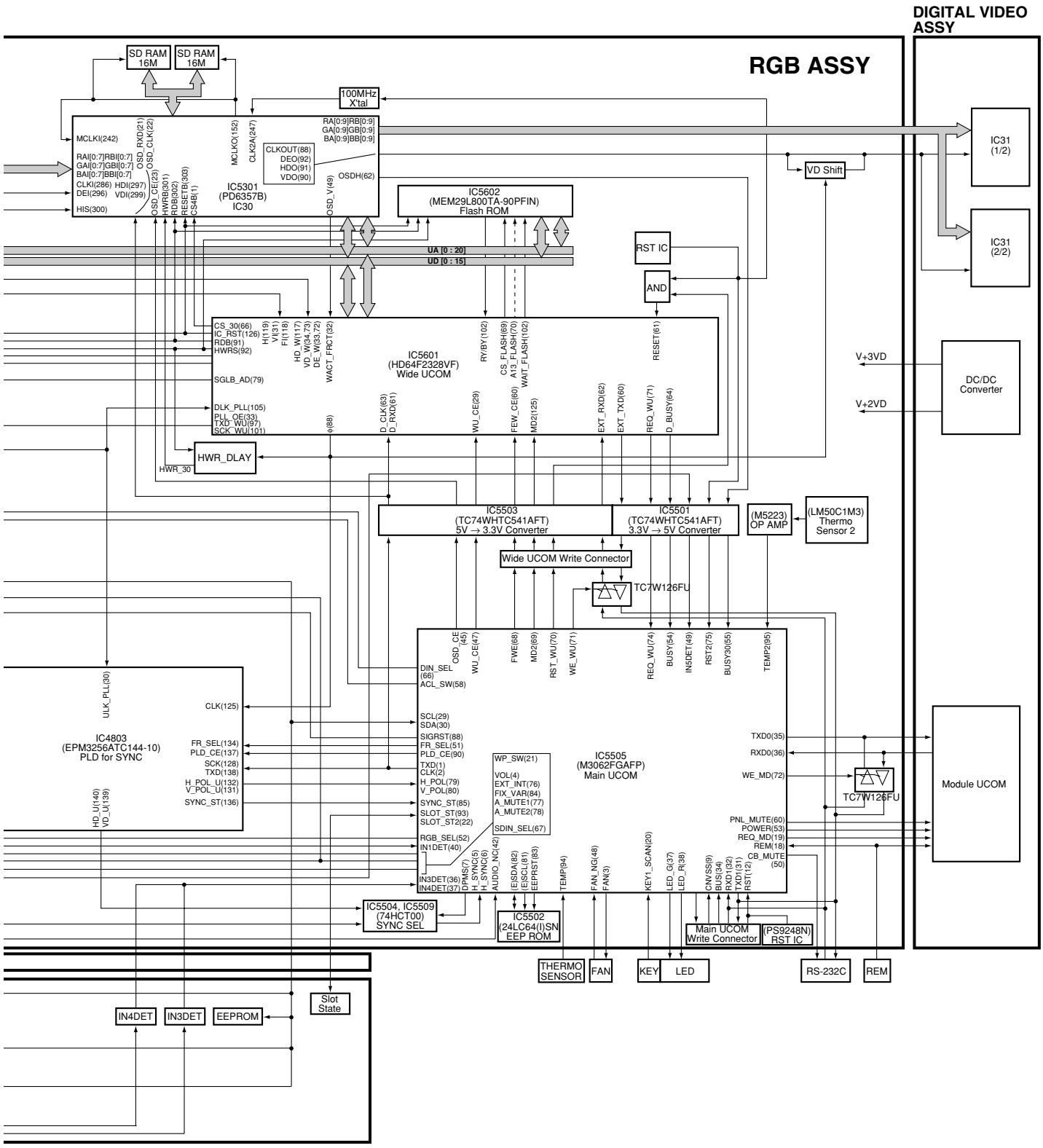
3.1.1 OVERALL BLOCK DIAGRAM



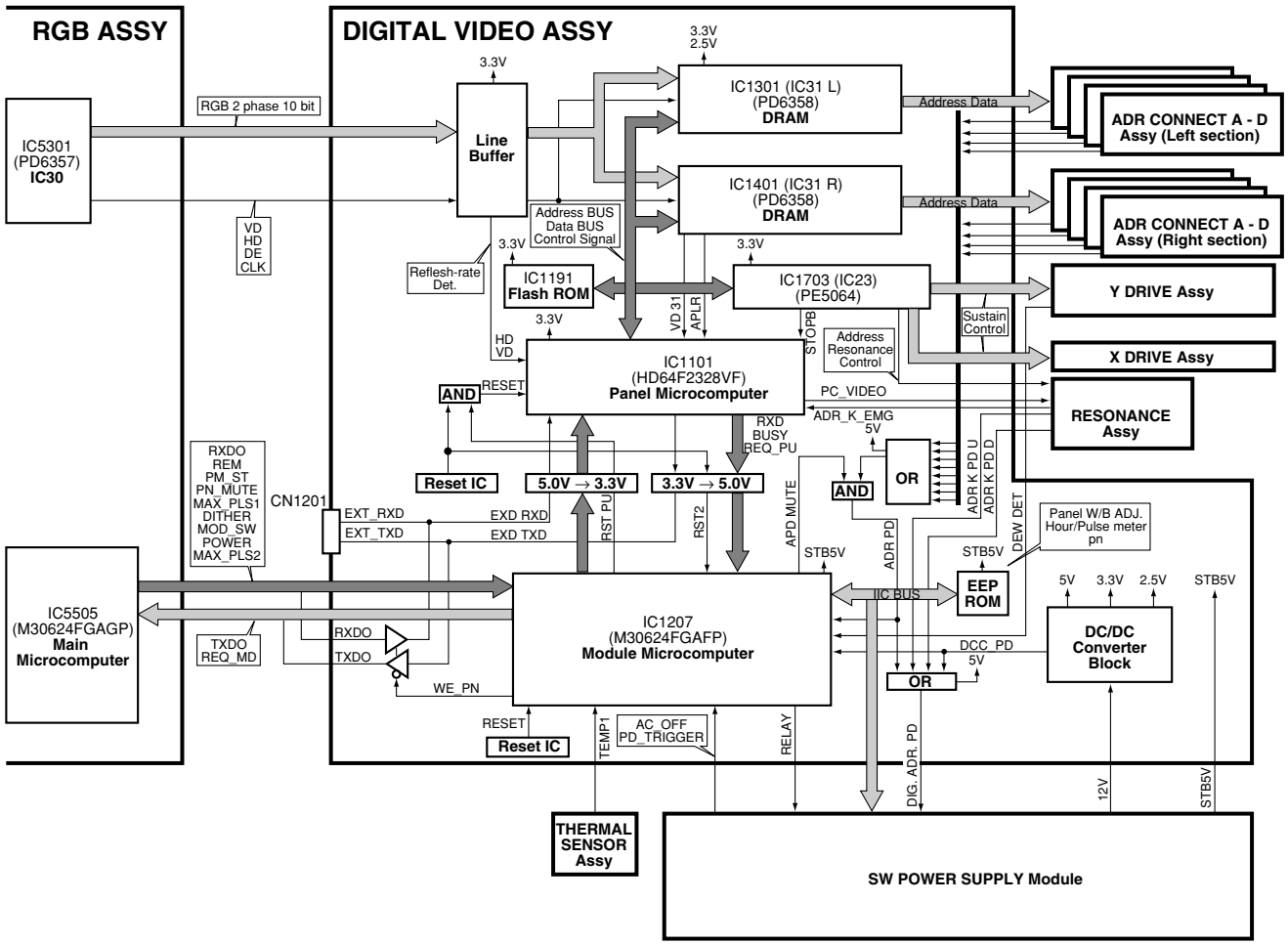
Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

3.1.2 RGB ASSY

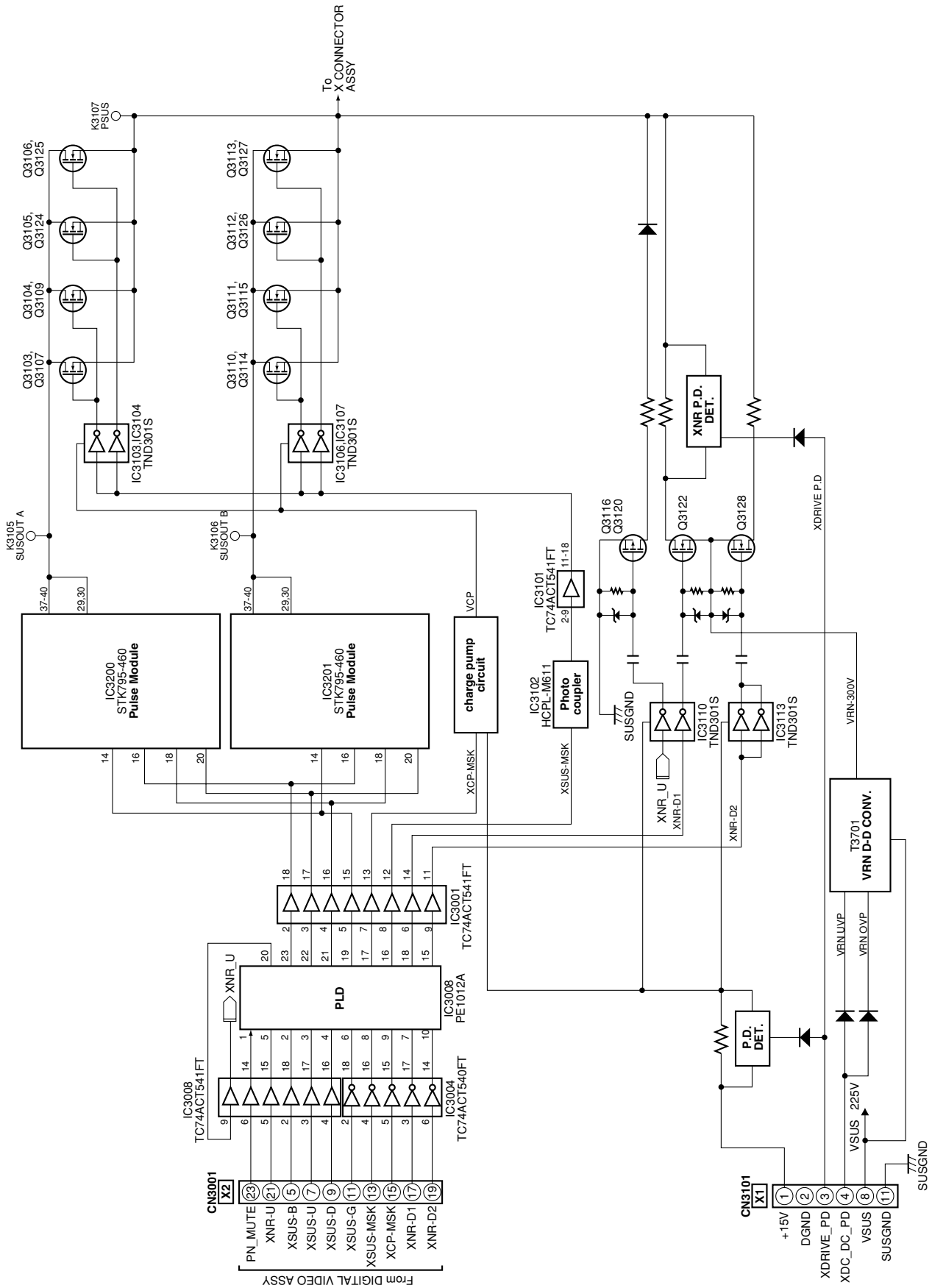

I/O ASSY
IC5102
(PE5066ACK)
IC101
SD RAM 16M
SD RAM 16M
IC5001
(???????)
IC102
(LCX541)
2-1
Selector
Buffer
(LCX125)
CLK SEL
IC4603
(CXA3516R)
A/D PLL AMP
(2-1 Select)
HOLD
CLP_AMP
CLP_AMP
ACL
ACL AMP
CBLK_MAT
CLP_MAT
CBLK_LPF
IC4402
(CXA2101AQ)
MATRIX ~35M
(3-1 Select)
6M LPF
GeonSYNC(1)
GeonSYNC(2)
2-1
SEL
SYNC SEP
Clamp
SW
Circuit
EXT_INT
13.5V
6.5V
-9V
STB+5V
V+12V
V+9V
V+5V
V+3.3V AD
V+3.3V PLD
V-5V
IC4004
IC4002
IC4003
IC4005
IC4006
IC4001
INPUT1
Component
/RGB
INPUT1
Monitor
Out
IC4110
(24LCS21A)
Plug&Play
ROM
(LT1399CS)
3CH
Video
Amp.
Time
Circuit
IC4108
(BA7657F)
RGB
2-1 SW
(TC74VHC541)
TTL
Conv.
INPUT2
Component
/RGB
INPUT1
Input DET.
Terminator
SW
WP_SW
IN1DET
Digital RGB
Analog RGB HV / YPbPr
IC4103
(TC4052BF)
EXT/INT
SEL
IC4104
(TA7630P)
Pre-Amp.
VOL
Audio
Input
Audio
Output
Mute
IC4103
(TC4052BF)
FIX/VAL
SEL
FIX_VAR
A_MUTE1
Audio Amp.
A_MUTE2
AUDIO_NG
(LCX541)
Line Buffer
(TFP201H)
TMDS RECEIVER
Chroma Decode (4-1 Select)
SECAM
FLT
6M LPF
6M LPF
SD RAM
3L Y/C
3D Y/C&CNR
I2C BUS
3D_RST
DVI_PS
VY_SBL
Expan.
DBR
2-1
SEL
2-1
SEL
6M
LPF
Audio
Input A
Audio
Input B
DVI
Y/C
VIDEO
IN
VIDEO
OUT
VCLK(132)
DEO(99)
HDO(98)
VDO(97)
-HS(100)
+HS(101)
+VS(102)
CLP_AMP(28)
CLP_MAT(111)
CBLK_MAT(110)
CBLK_LPF(109)
HDLD_PLL(31)


DIGITAL VIDEO ASSY
RGB ASSY
SD RAM 16M
SD RAM 16M
100MHz X'tal
IC5301 (PD6357B) IC30
IC5602 (MEM29L800TA-90PFIN) Flash ROM
UA [0 : 20]
UD [0 : 15]
RST IC
AND
VD Shift
IC31 (1/2)
IC31 (2/2)
IC5601 (HD64F2328VF) Wide UCOM
V+3VD
V+2VD
DC/DC Converter
HWR_DLAY
IC5503 (TC74WHTC541AFT) 5V → 3.3V Converter
IC5501 (TC74WHTC541AFT) 3.3V → 5V Converter
(M5223) OP AMP
(LM50C1M3) Thermo Sensor 2
Wide UCOM Write Connector
TC7W126FU
IC4803 (EPM3256ATC144-10) PLD for SYNC
IC5505 (M3062FGAFP) Main UCOM
Module UCOM
TC7W126FU
IC5504, IC5509 (74HCT00) SYNC SEL
IC5502 (24LC64(I)SN EEP ROM
Main UCOM Write Connector
(PS9248N) RST IC
THERMO SENSOR
FAN
KEY
LED
RS-232C
REM
IN4DET
IN3DET
EEPROM
Slot State

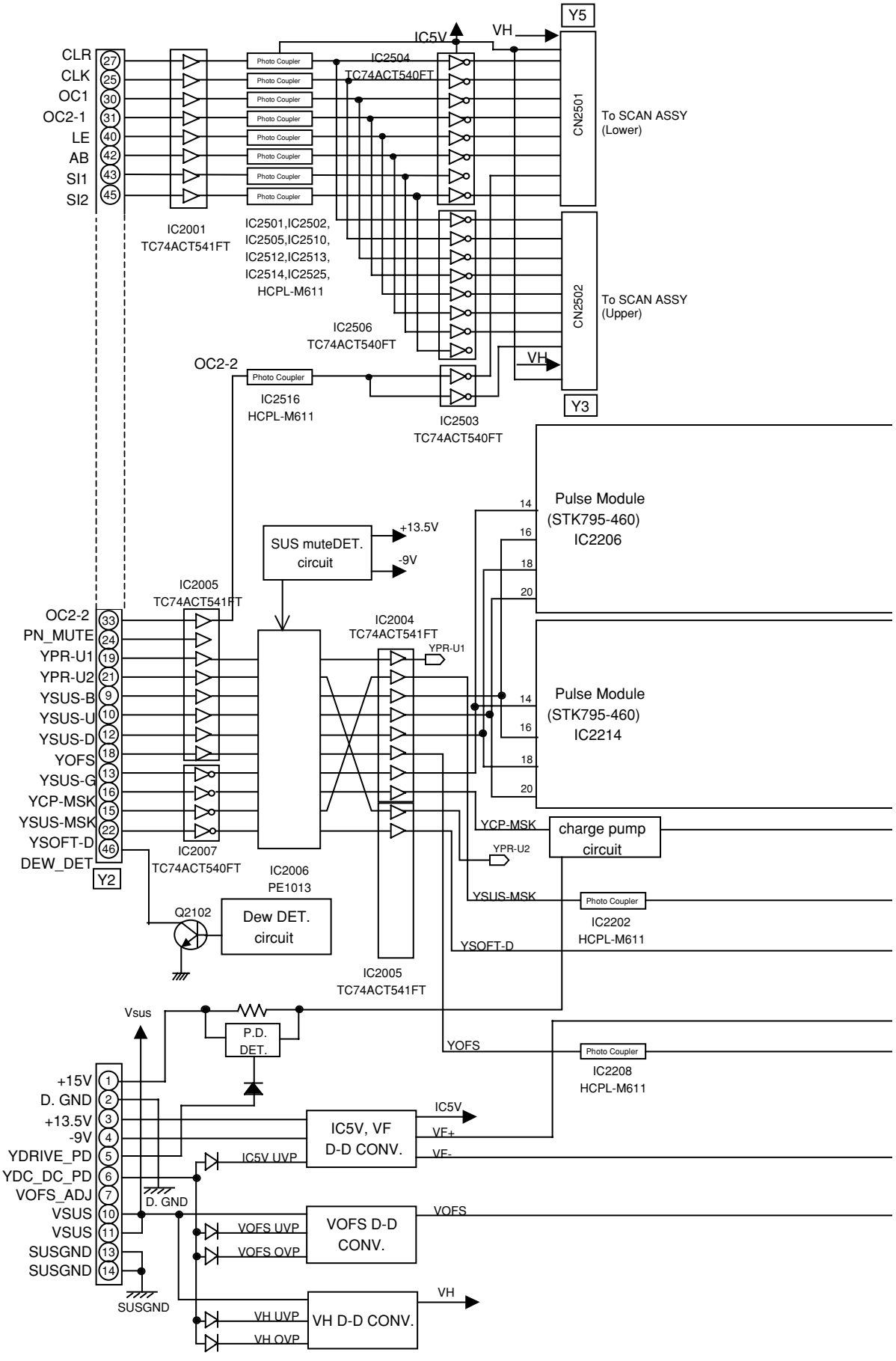
3.1.3 DIGITAL VIDEO ASSY

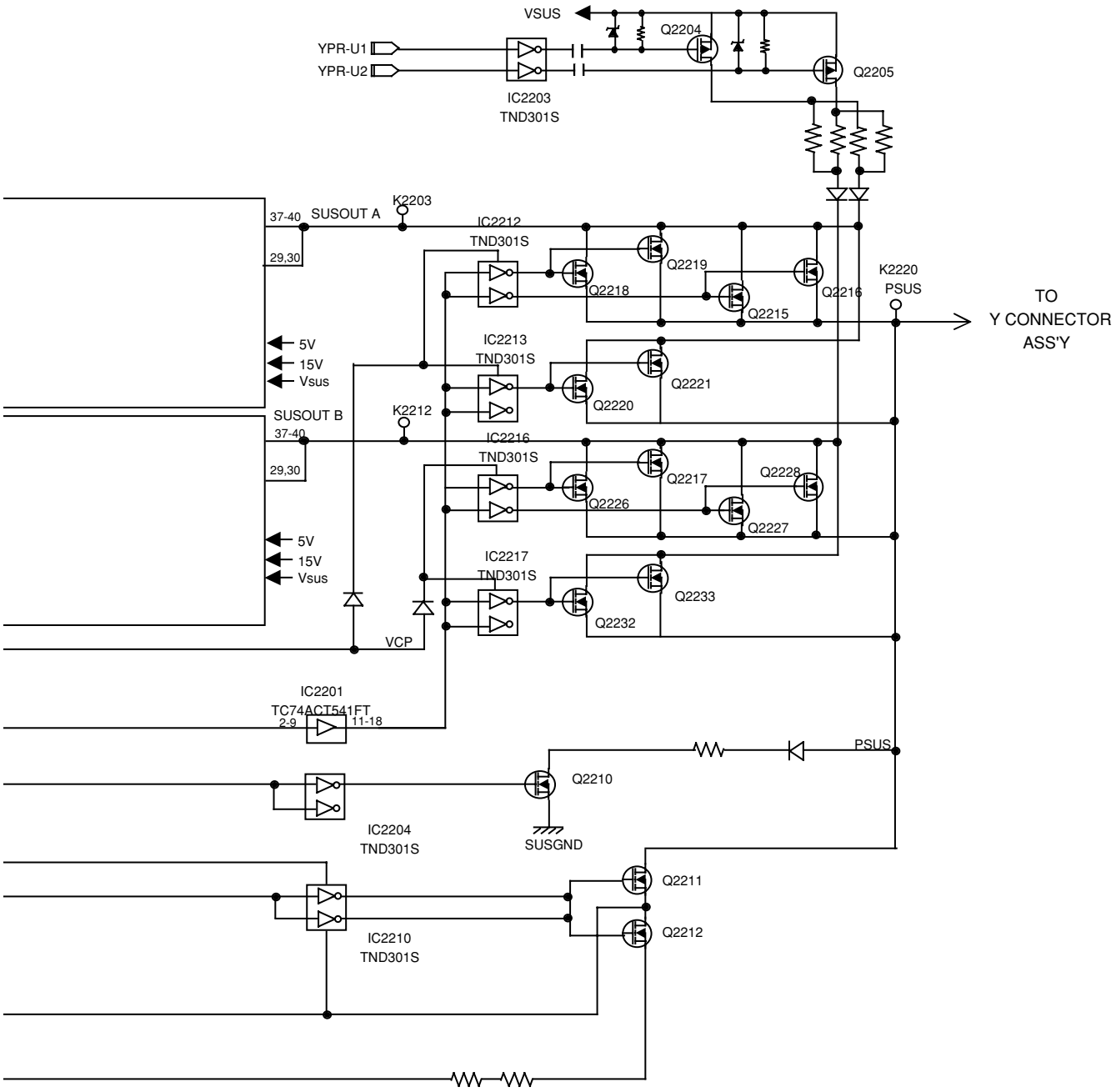


3.1.4 X DRIVE ASSY

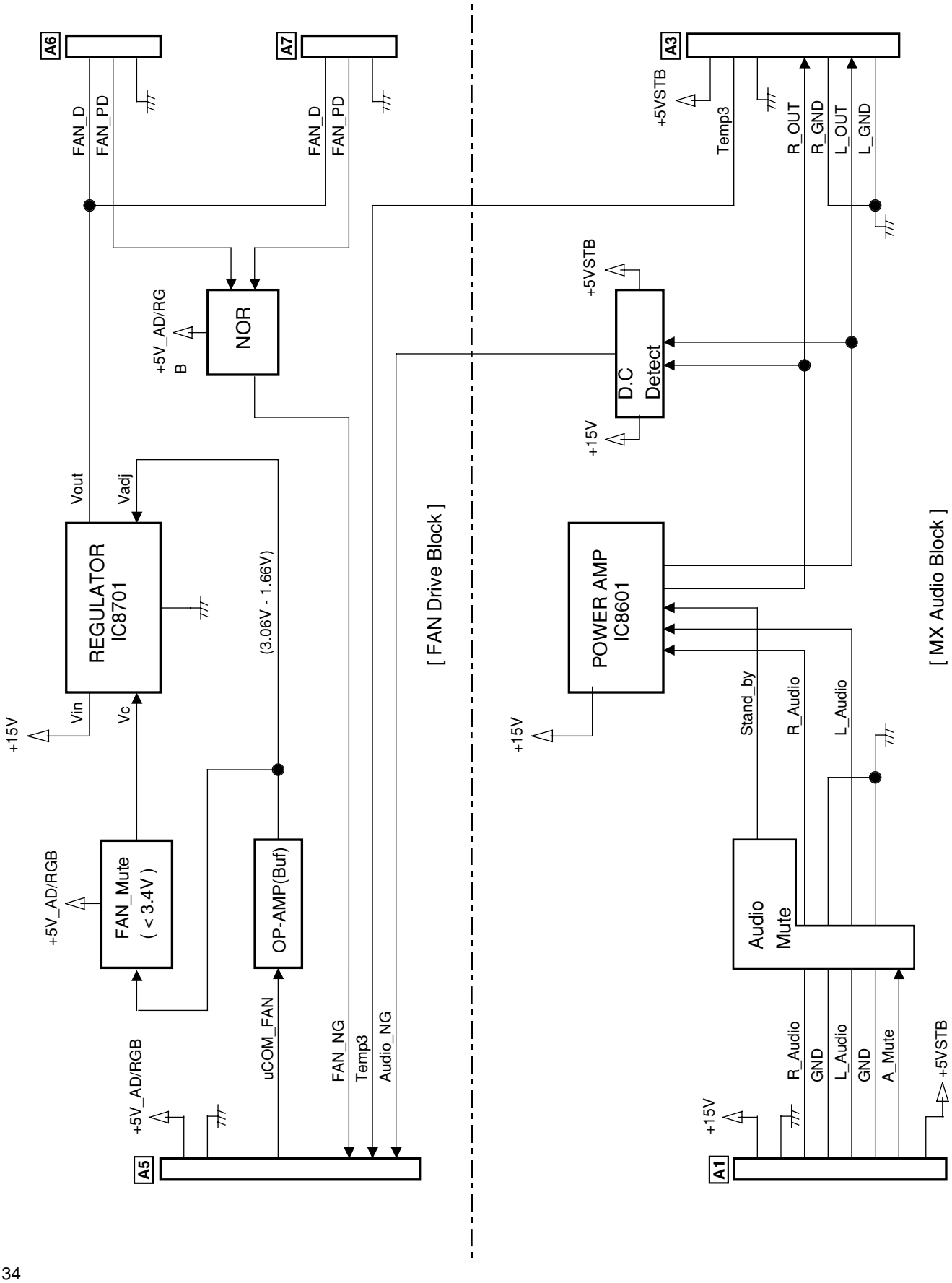


3.1.5 Y DRIVE ASSY

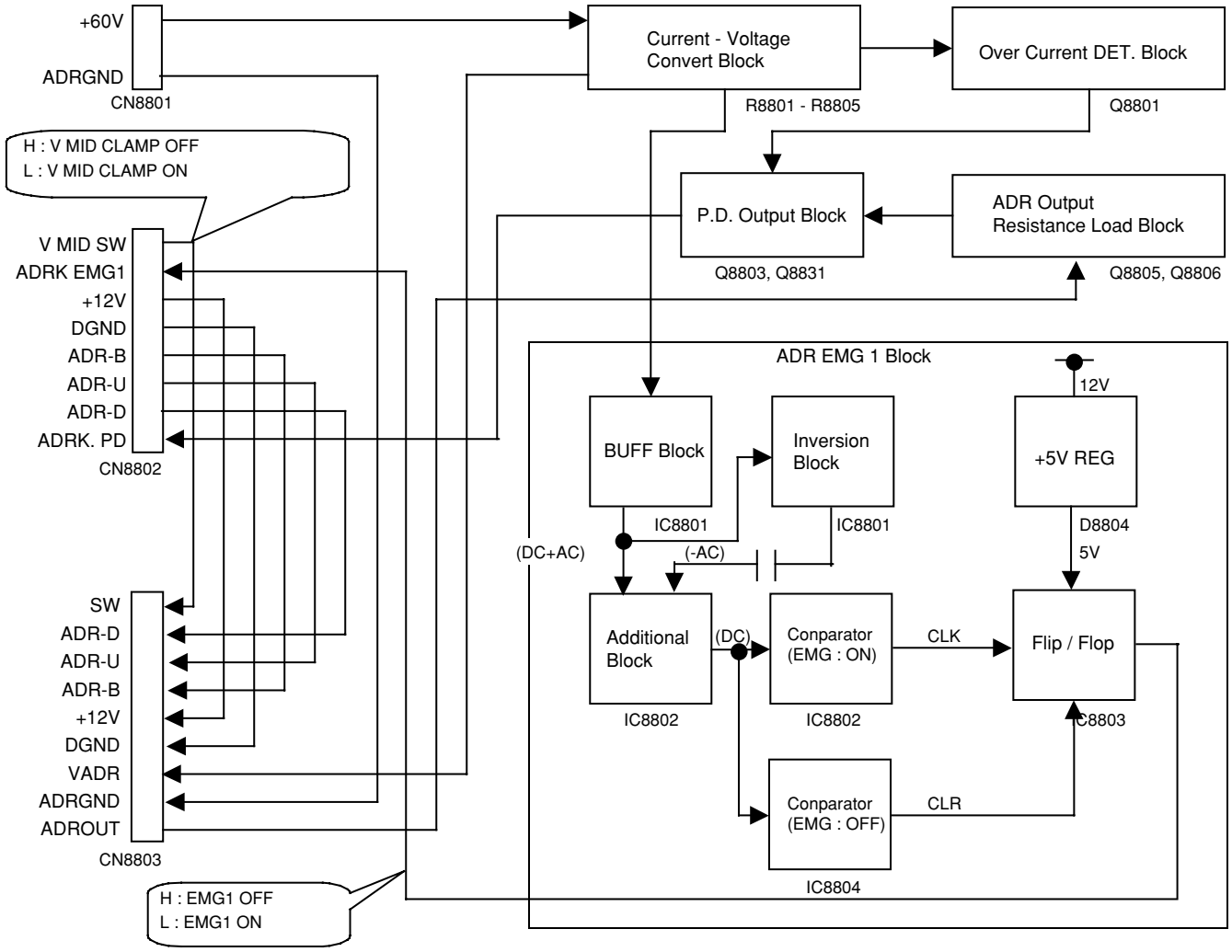



VSUS
Q2204
YPR-U1
YPR-U2
Q2205
IC2203
TND301S
K2203
37-40
SUSOUT A
IC2212
TND301S
29,30
Q2219
Q2218
Q2216
Q2215
K2220
PSUS
TO
Y CONNECTOR
ASS'Y
5V
15V
Vsus
IC2213
TND301S
Q2221
Q2220
SUSOUT B
K2212
37-40
IC2216
TND301S
29,30
Q2217
Q2228
Q2226
Q2227
5V
15V
Vsus
IC2217
TND301S
Q2233
Q2232
VCP
IC2201
TC74ACT541FT
2-9
11-18
PSUS
Q2210
IC2204
TND301S
SUSGND
Q2211
Q2212
IC2210
TND301S

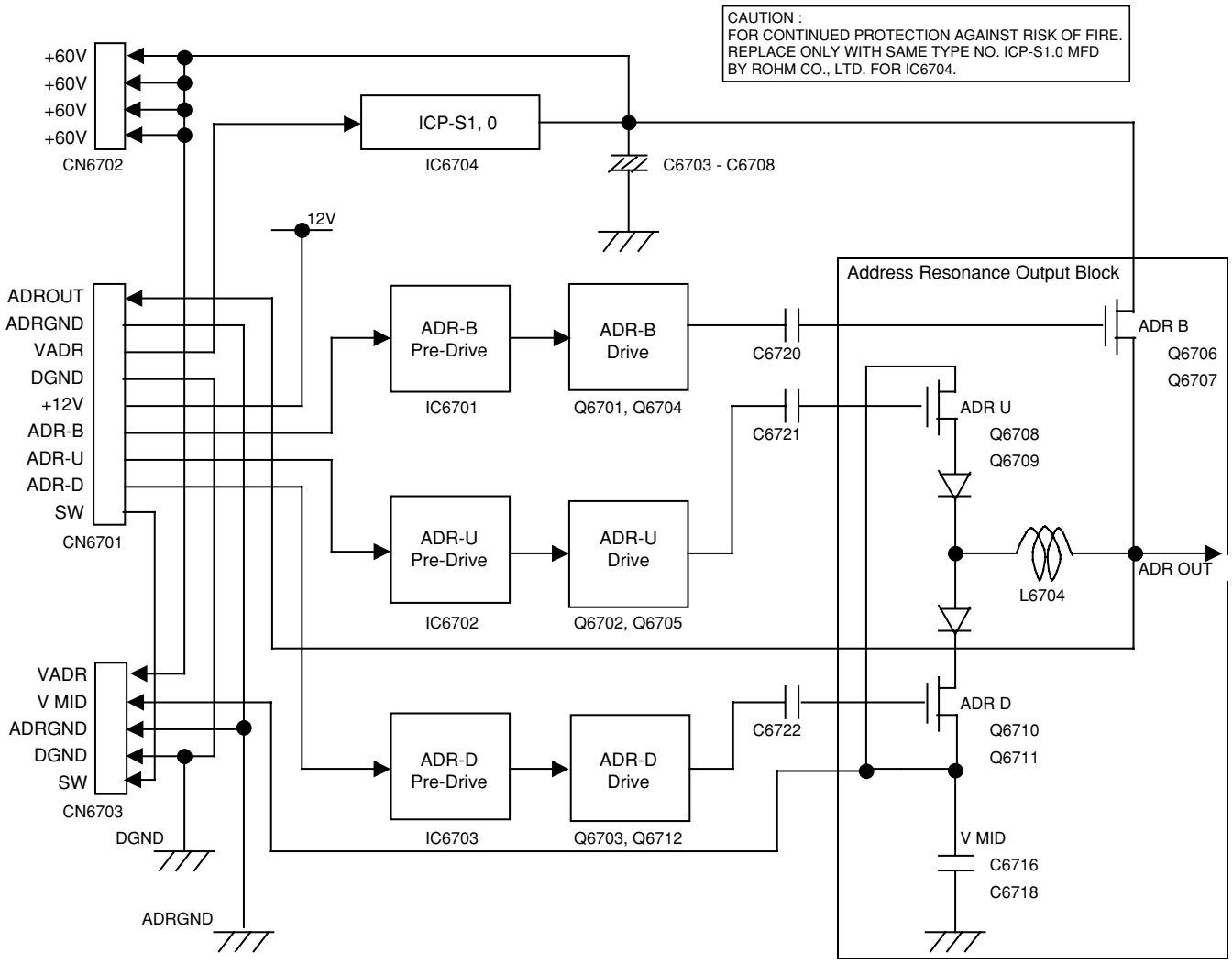
3.1.6 MX AUDIO ASSY



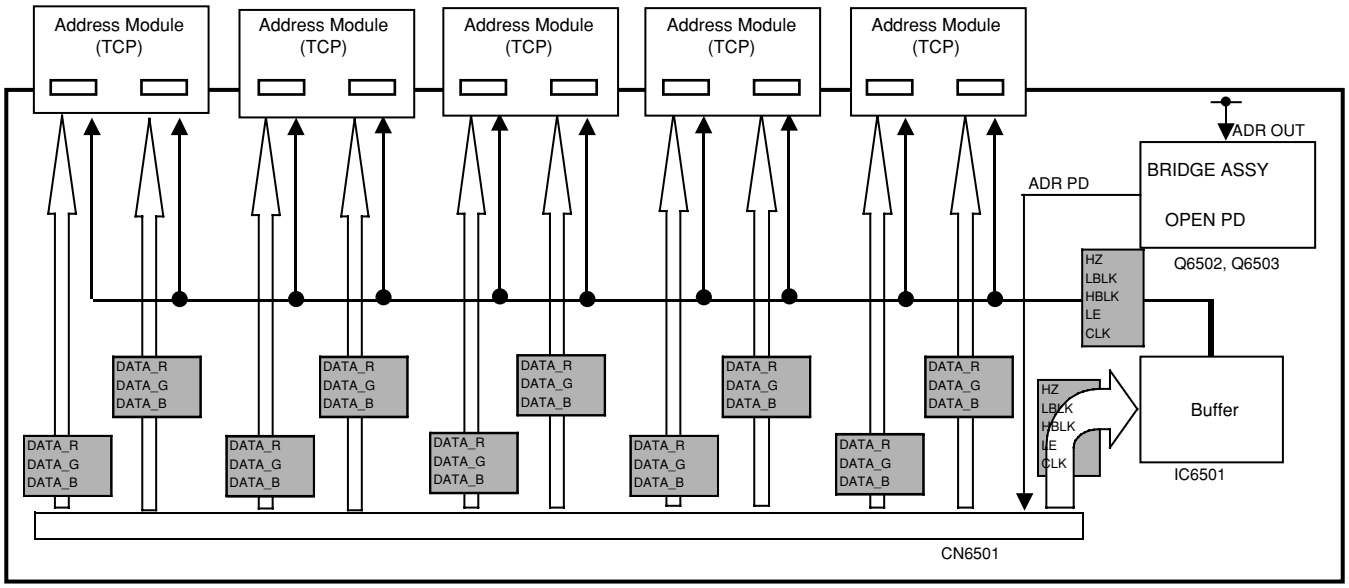
3.1.7 SUB ADDRESS A and B ASSYS



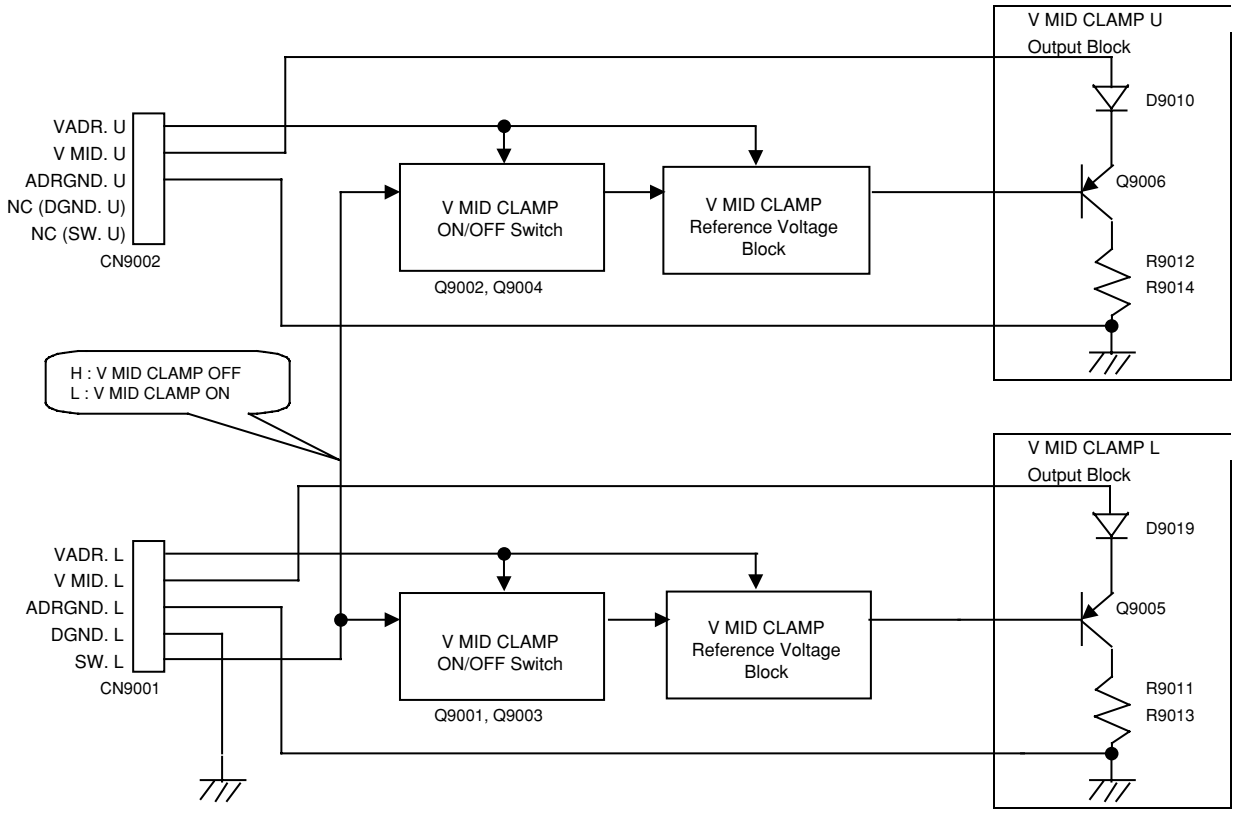
3.1.8 RESONANCE ASSY



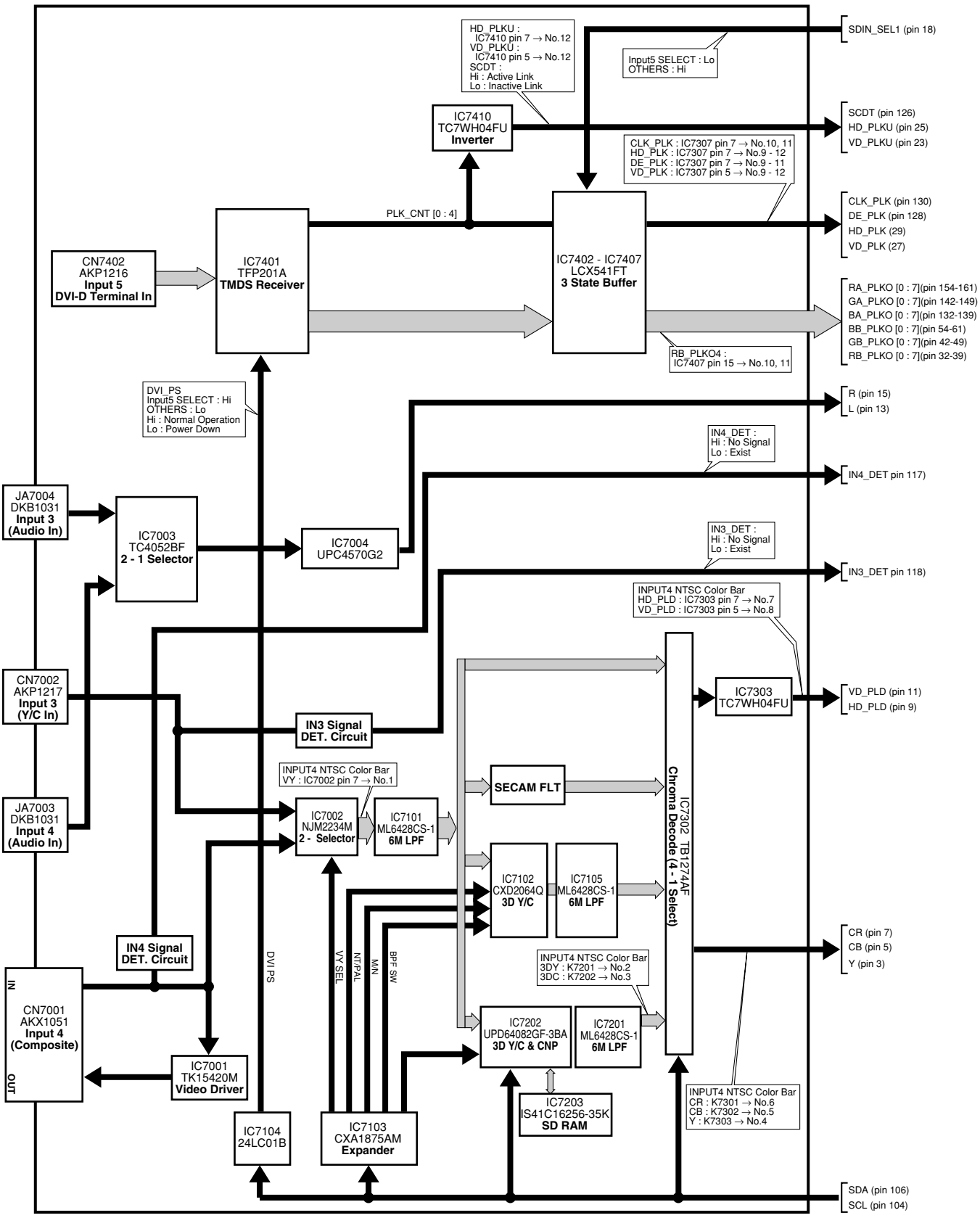
3.1.9 ADR CONNECT A, B, C and D ASSYS



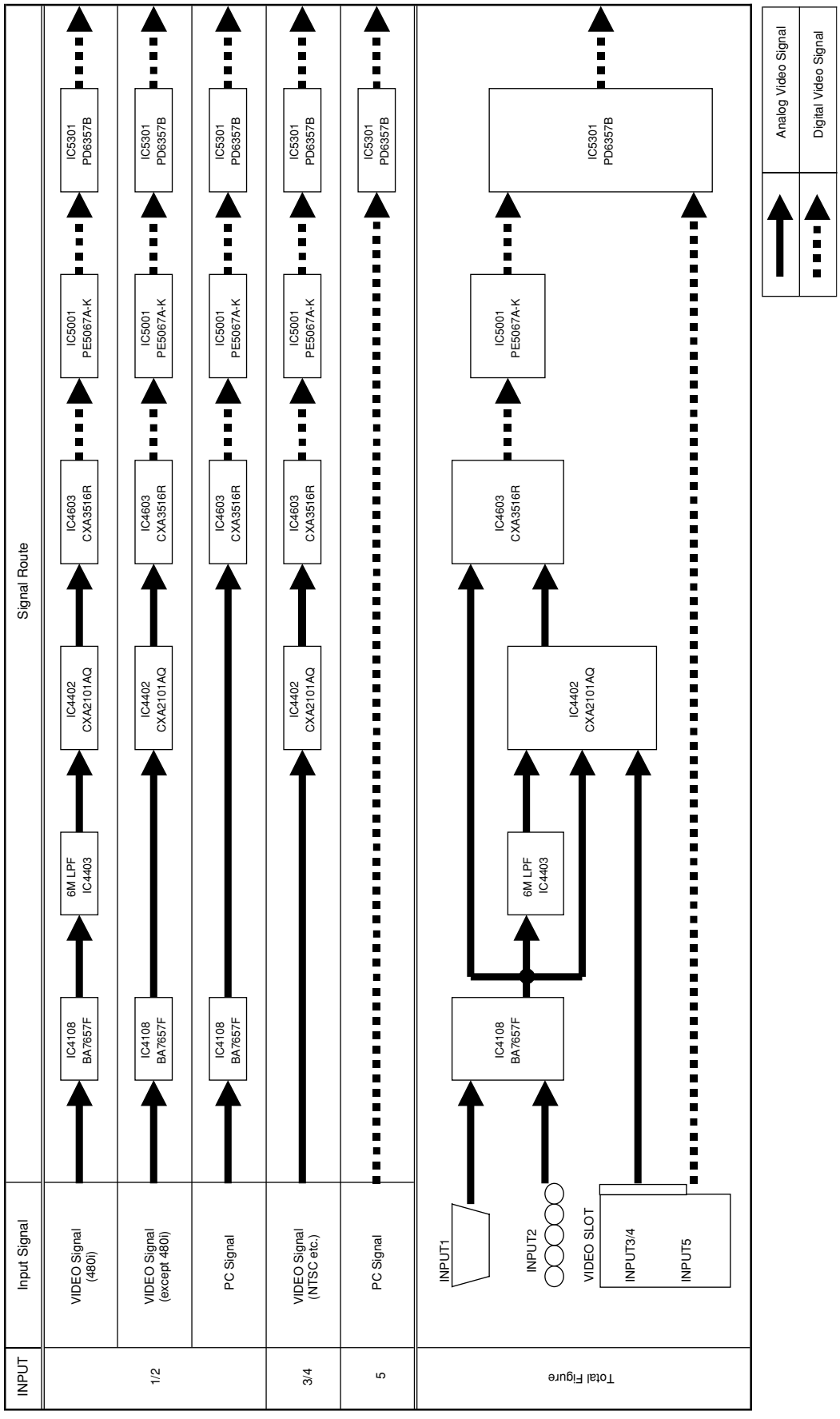
3.1.10 V MID CLAMP ASSY



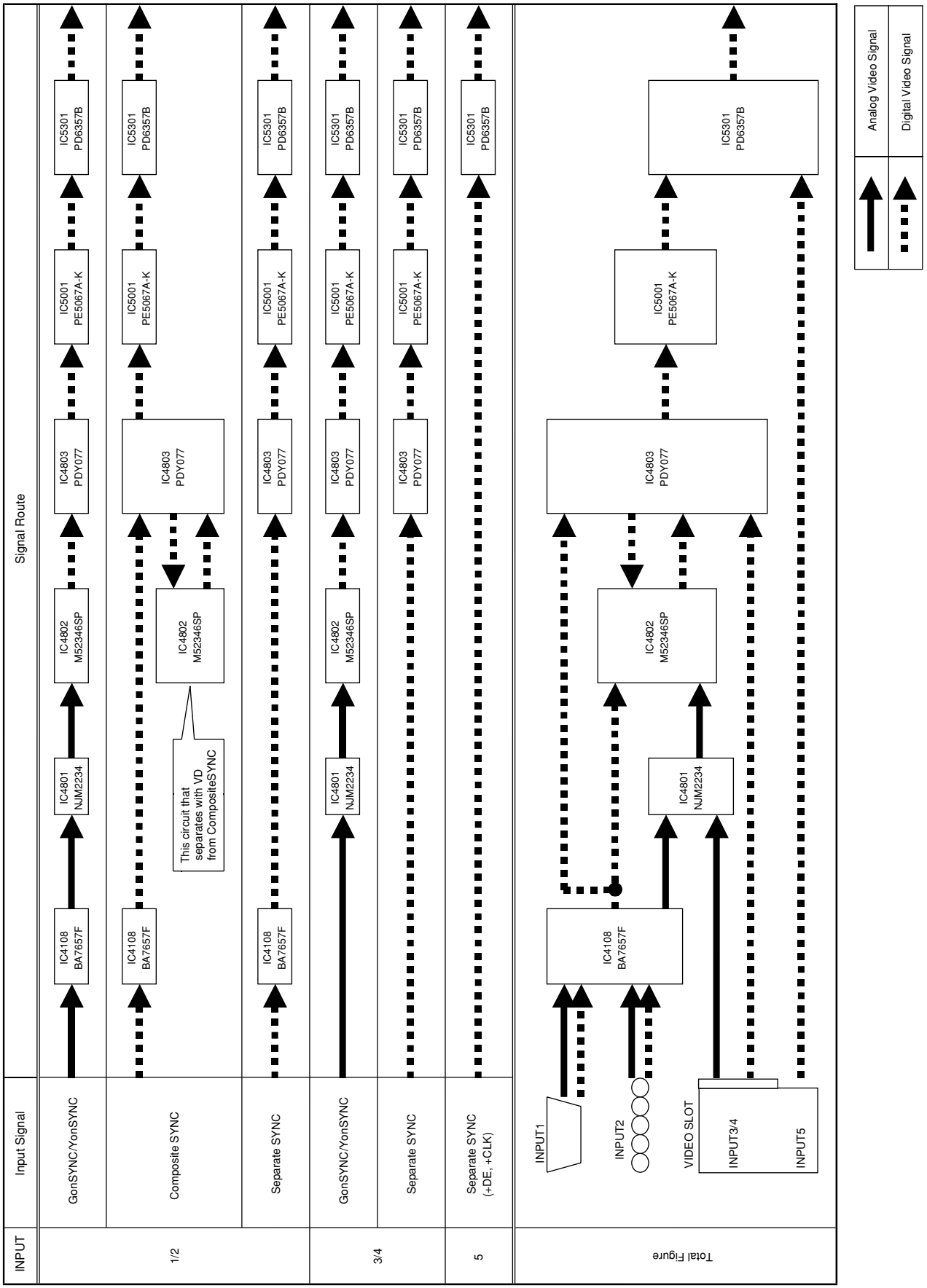
3.1.11 VIDEO CARD (CMPAV05)



3.1.12 VIDEO SIGNAL ROUTE



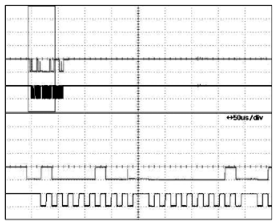
3.1.13 SYNC SIGNAL ROUTE



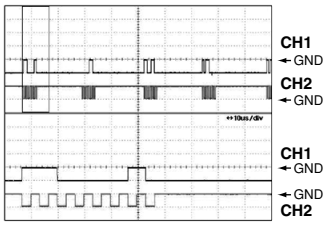
3.2 WAVEFORMS

RGB ASSY

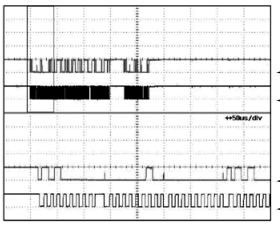
1 **CH1 : IC5505 - pin 29 (SCL)**
CH2 : IC5505 - pin 30 (SDA)
V: 5V/div. H: 500µsec/div.



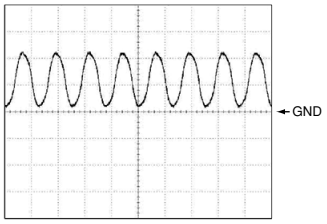
6 **CH1 : IC5505 - pin 1 (TXD)**
CH2 : IC5505 - pin 2 (CLK)
V: 5V/div. H: 100µsec/div.



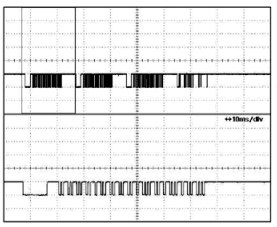
2 **CH1 : IC5505 - pin 81 ((E) SCL)**
CH2 : IC5505 - pin 82 ((E) SDA)
V: 5V/div. H: 500µsec/div.



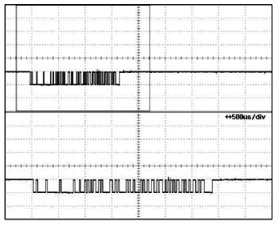
7 **IC5505 - pin 15 (XIN)**
V: 2V/div. H: 50nsec/div.



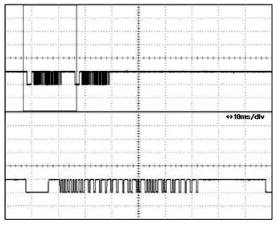
3 **IC5505 - pin 20 (KEYSCAN)**
V: 5V/div. H: 50msec/div.



4 **IC5505 - pin 35 (TXDO)**
V: 5V/div. H: 1msec/div.

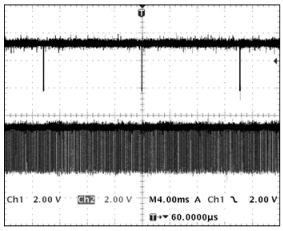


5 **IC5505 - pin 18 (REM)**
V: 5V/div. H: 50msec/div.

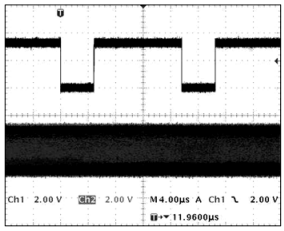


DIGITAL VIDEO ASSY

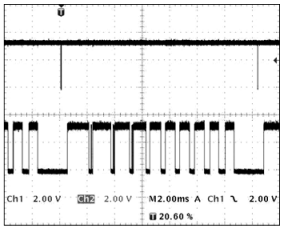
(1) K1327 (VDI)
K1328 (HDI)
V: 2V/div. H: 4msec/div.



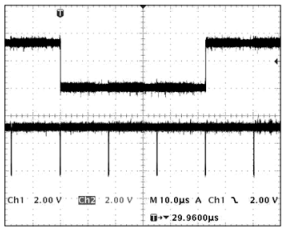
(4) K1326 (DEI)
K1333 (VCLKL)
V: 2V/div. H: 4µsec/div.



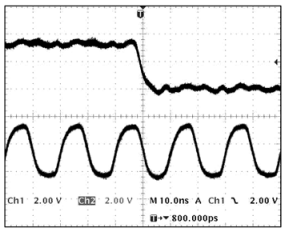
(8) K1308 (VDRB)
IC1501 - pin 15 (LBLK)
V: 2V/div. H: 2msec/div.



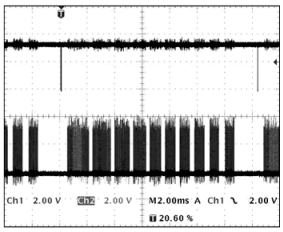
(1) K1327 (VDI)
K1328 (HDI)
V: 2V/div. H: 10µsec/div.



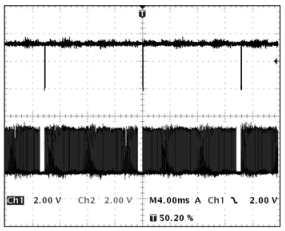
(4) K1326 (DEI)
K1333 (VCLKL)
V: 2V/div. H: 10nsec/div.



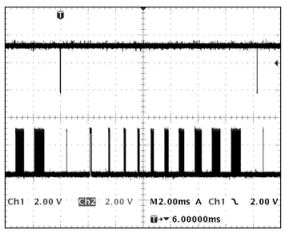
(9) K1308 (VDRB)
IC1501 - pin 13 (LE)
V: 2V/div. H: 2msec/div.



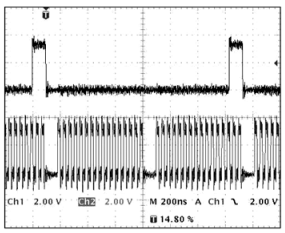
(2) K1327 (VDI)
CN1004 pin 49 (R DIGITAL VIDEO)
V: 2V/div. H: 4msec/div.



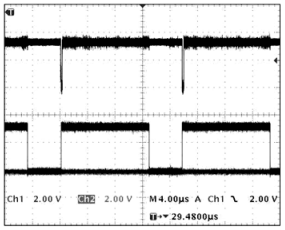
(5) K1308 (VDRB)
R1713 - pin 7 (XSUS_B)
V: 2V/div. H: 2msec/div.



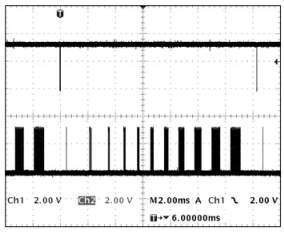
(10) IC1501 - pin 13 (LE)
IC1501 - pin 11 (ADRCLK)
V: 2V/div. H: 200nsec/div.



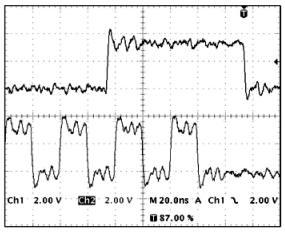
(3) K1328 (HDI)
K1326 (DEI)
V: 2V/div. H: 4µsec/div.



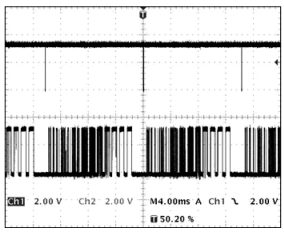
(6) K1308 (VDRB)
R1703 - pin 8 (YSUS_B)
V: 2V/div. H: 2msec/div.



(10) IC1501 - pin 13 (LE)
IC1501 - pin 11 (ADRCLK)
V: 2V/div. H: 20nsec/div.

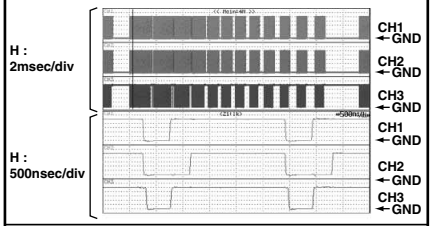


(7) K1308 (VDRB)
R1343 - pin 8 (RDAT_DL0)
V: 2V/div. H: 4msec/div.

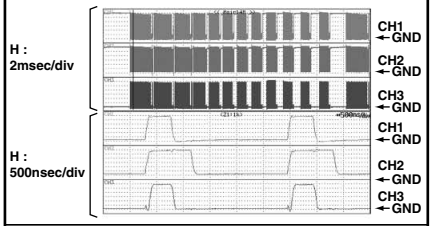


RESONANCE ASSY

① **CH1 : IC6702 - pin 2**
CH2 : IC6701 - pin 2
CH3 : IC6703 - pin 2
V: 1V/div.
(Input : VIDEO, Signal : Color bar)



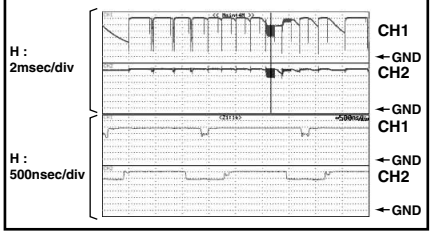
② **CH1 : D6706 Cathode**
CH2 : D6703 Cathode
CH3 : D6708 Cathode
V: 2V/div.
(Input : VIDEO, Signal : Color bar)



③ **CH1 : Q6706 Drain**
CH2 : Q6710 Soruse
V: 10V/div.
(Input : VIDEO, Signal : Color bar)

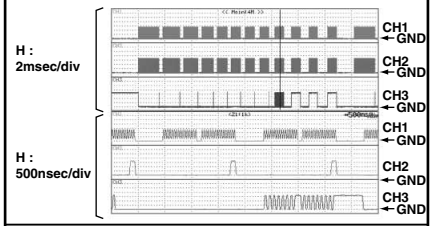
④ **CH1 : Q6706 Drain**
CH2 : Q6710 Soruse
V: 10V/div.
(Input : PC, Signal : Color bar)

⑤ **CH1 : Q6708 Drain**
CH2 : Q6710 Drain
V: 10V/div.
(Input : VIDEO, Signal : Color bar)

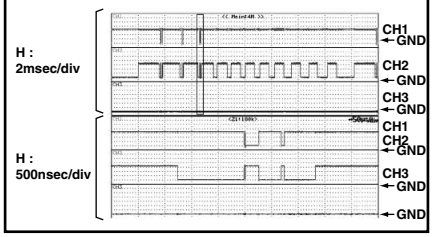


ADR CONNECT A - D ASSY

① **CH1 : IC6501 - pin 8 (CLK)**
CH2 : IC6501 - pin 6 (LE)
CH3 : IC6501 - (DATA)
V: 1V/div.
(Input : VIDEO, Signal : Color bar)

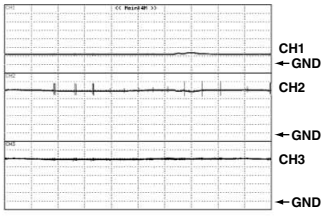


② **CH1 : IC6501 - pin 5 (HBLK)**
CH2 : IC6501 - pin 3 (LBLK)
CH3 : IC6501 - pin 2 (HZ)
V: 1V/div.
(Input : VIDEO, Signal : Color bar)

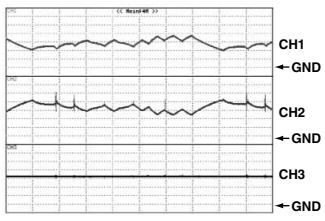


SUB ADDRESS A, B ASSY

① **CH1 : IC8801 - pin 3**
CH2 : IC8801 - pin 7
CH3 : IC8802 - pin 1
V: 2V/div. H: 2msec/div.
(Input : VIDEO, Signal : Color bar)

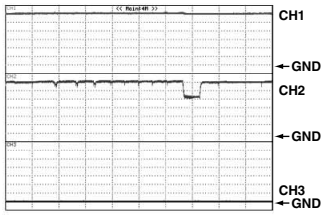


② **CH1 : IC8801 - pin 3**
CH2 : IC8801 - pin 7
CH3 : IC8802 - pin 1
V: 2V/div. H: 2msec/div.
(Input : VIDEO, Signal : Color bar)



V MID CLAMP ASSY

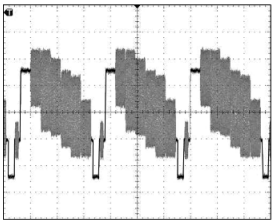
① **CH1 : Q9006 Base (CLAMP REF V)**
CH2 : D9010 Anode (MID)
CH3 : Q9006 Collector
V: 10V/div. H: 2msec/div.
(Input : VIDEO, Signal : Color bar)



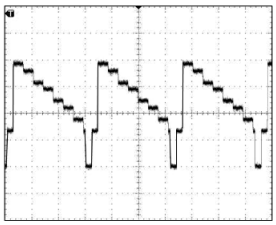
② **CH1 : Q9006 Base (CLAMP REF V)**
CH2 : D9010 Anode (MID)
CH3 : Q9006 Collector
V: 10V/div. H: 2msec/div.
(Input : PC, Signal : Color bar)

VIDEO CARD (CMPAV05)

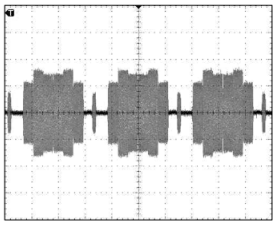
1 **IC7002 - pin 7 (VY)**
V: 200mV/div. H: 20µsec/div.
(INPUT4, NTSC Color-Bar)



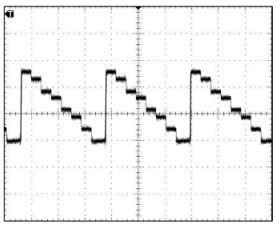
2 **K7201 (3DY)**
V: 200mV/div. H: 20µsec/div.
(INPUT4, NTSC Color-Bar)



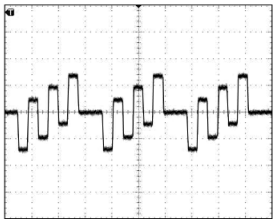
3 **K7202 (3DC)**
V: 200mV/div. H: 20µsec/div.
(INPUT4, NTSC Color-Bar)



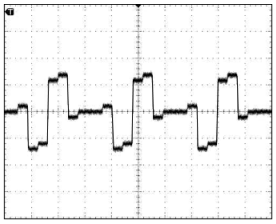
4 **K7303 (Y)**
V: 200mV/div. H: 20µsec/div.
(INPUT4, NTSC Color-Bar)



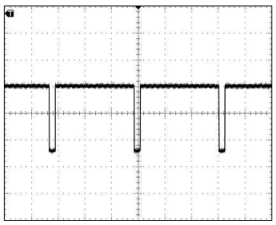
5 **K7302 (CB)**
V: 200mV/div. H: 20µsec/div.
(INPUT4, NTSC Color-Bar)



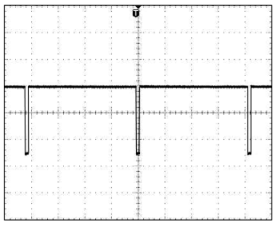
6 **K7301 (CR)**
V: 200mV/div. H: 20µsec/div.
(INPUT4, NTSC Color-Bar)



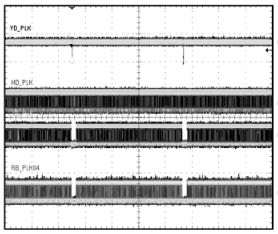
7 **IC7303 - pin 7 (HDPLD)**
V: 2V/div. H: 20µsec/div.
(INPUT4, NTSC Color-Bar)



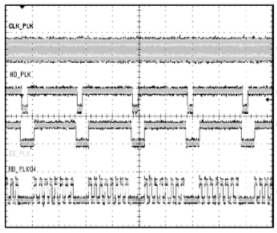
8 **IC7303 - pin 5 (VDPLD)**
V: 2V/div. H: 4msec/div.
(INPUT4, NTSC Color-Bar)



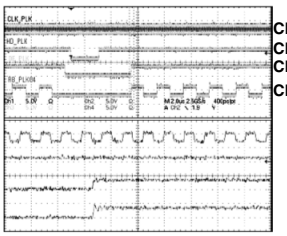
9 **CH1 : IC7408 - pin 14 (VD_PLK)**
CH2 : IC7408 - pin 15 (HD_PLK)
CH3 : IC7408 - pin 17 (DE_PLK)
CH4 : IC7408 - pin 15 (RB_PLKO4)
V: 5V/div. H: 4msec/div.
(INPUT5, VESA, 1024 × 768@60Hz, RAMP)



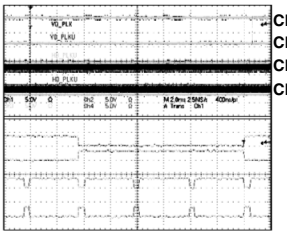
10 **CH1 : IC7408 - pin 18 (CLK_PLK)**
CH2 : IC7408 - pin 15 (HD_PLK)
CH3 : IC7408 - pin 17 (DE_PLK)
CH4 : IC7408 - pin 15 (RB_PLKO4)
V: 5V/div. H: 10µsec/div.
(INPUT5, VESA, 1024 × 768@60Hz, RAMP)



11 **CH1 : IC7408 - pin 18 (CLK_PLK)**
CH2 : IC7408 - pin 15 (HD_PLK)
CH3 : IC7408 - pin 17 (DE_PLK)
CH4 : IC7408 - pin 15 (RB_PLKO4)
V: 5V/div. H: 40nsec/div.
(INPUT5, VESA, 1024 × 768@60Hz, RAMP)

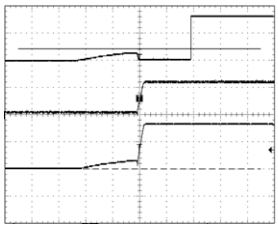
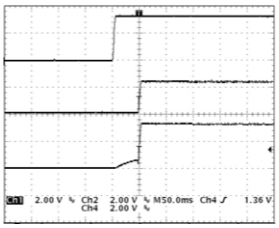
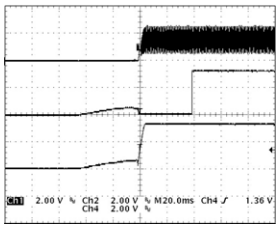
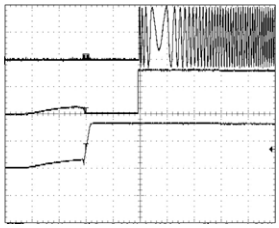


12 **CH1 : IC7408 - pin 14 (VD_PLK)**
CH2 : IC7410 - pin 5 (VD_PLKU)
CH3 : IC7408 - pin 15 (HD_PLK)
CH4 : IC7410 - pin 7 (HD_PLKU)
V: 5V/div. H: 2msec/div.
(INPUT5, VESA, 1024 × 768@60Hz, RAMP)

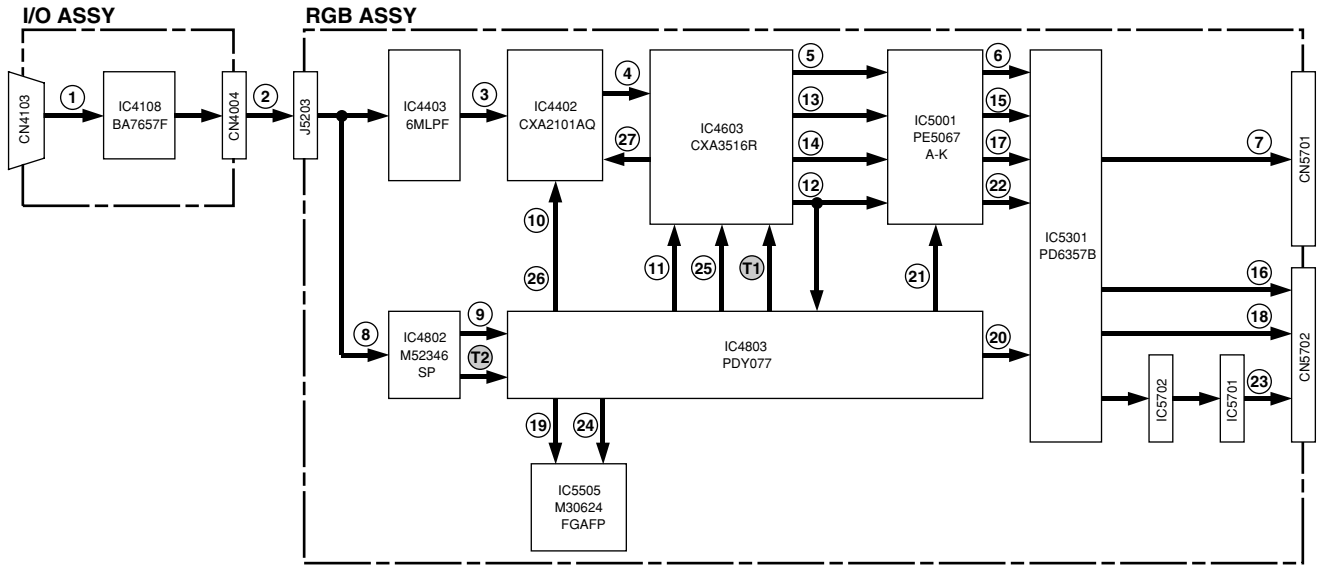


RGB VIDEO Signal Waveforms

● Waveform at Power ON

Reset 2, D+2.5V, D+3.3V V: 2V/div. H: 20msec/div.	A+3.3V, D+2.5V, D+3.3V V: 2V/div. H: 50msec/div.	Wide UCOM, Reset 2, D+3.3V V: 2V/div. H: 20msec/div.	IC100 clk, Reset 2, D+3.3V V: 2V/div. H: 20msec/div.
			

● Measurement Point



● Trigger Signal

(T1) K4805 (HD_PLL) : For Horizonatal Sync. Signal
(T2) IC4802 - pin 13 : For Vertical Sync. Signal

● Measurement Condition

(1) to (27) :

Input	: INPUT 1 (Component)
Input Signal	: 480i
Signal Pattern	: H RAMP
Screen Mode	: WIDE
Clamp Mode	: AUTO
Color Mode	: COLOR MODE 1

(28) to (29) :

Input	: INPUT 2 (RGBHV)
Input Signal	: XGA@60Hz
Signal Pattern	: Monoscope
Screen Mode	: FULL
Clamp Mode	: AUTO
Color Mode	: COLOR MODE 1

(30) to (31) :

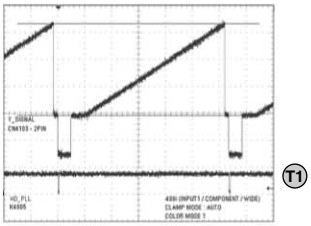
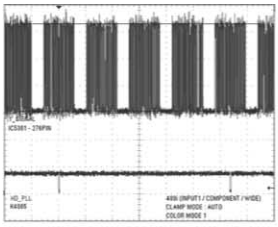
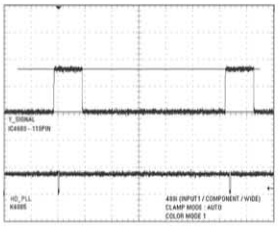
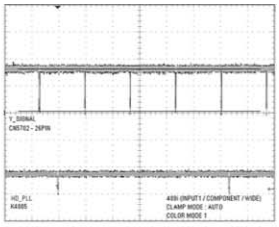
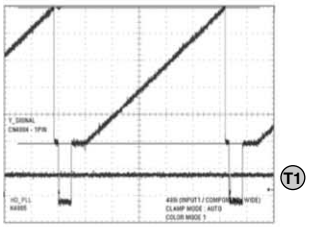
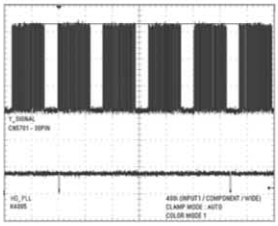
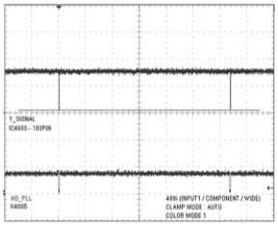
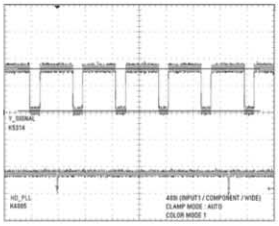
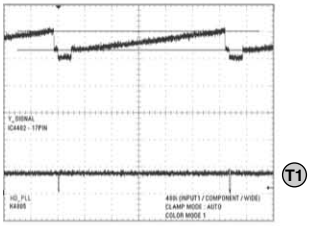
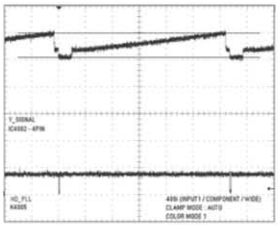
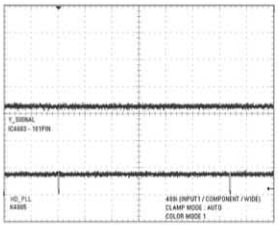
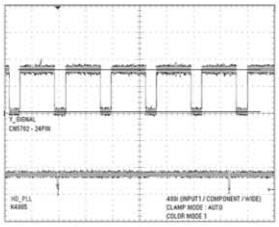
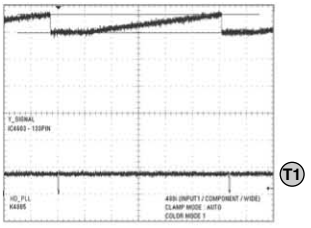
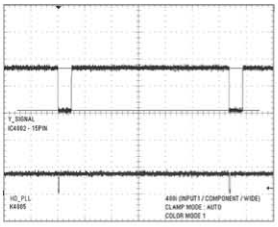
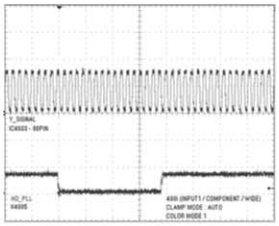
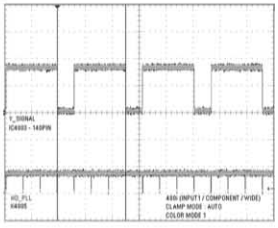
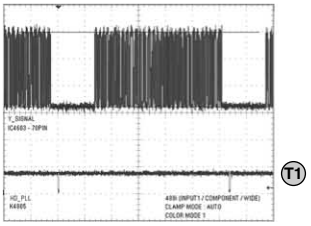
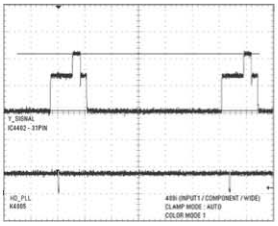
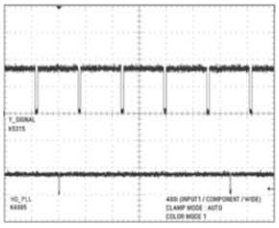
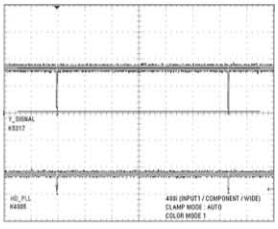
Input	: INPUT 5 (DVI)
Input Signal	: XGA@60Hz
Signal Pattern	: Monoscope
Screen Mode	: FULL
Clamp Mode	: AUTO
Color Mode	: COLOR MODE 1

(32) to (33) :

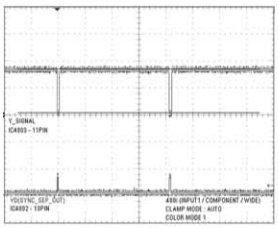
Input	: INPUT 2 (RGBHV)
Input Signal	: 1125i
Signal Pattern	: Monoscope
Screen Mode	: FULL
Clamp Mode	: AUTO
Color Mode	: COLOR MODE 1

● **Information**

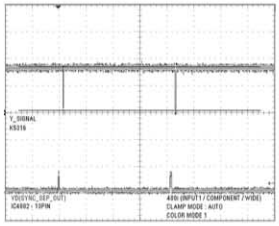
NO.	Point	Information	Trigger Signal (CH4)
1	CN4103 - pin 2	Synchronize with K4805 (HD_PLL)	T1
2	CN4004 - pin 1	Synchronize with K4805 (HD_PLL)	T1
3	IC4402 - pin 17	Synchronize with K4805 (HD_PLL)	T1
4	IC4603 - pin 133	Synchronize with K4805 (HD_PLL)	T1
5	IC4603 - pin 70	Synchronize with K4805 (HD_PLL)	T1
6	IC5301 - pin 276	Synchronize with K4805 (HD_PLL) and frequency is 4 times.	T1
7	IC5701 - pin 30	Do not synchronize with K4805 (HD_PLL)	T1
8	IC4802 - pin 4	Synchronize with K4805 (HD_PLL)	T1
9	IC4802 - pin 15	Synchronize with K4805 (HD_PLL)	T1
10	IC4402 - pin 31	Synchronize with K4805 (HD_PLL)	T1
11	IC4603 - pin 113	Synchronize with K4805 (HD_PLL)	T1
12	IC4603 - pin 103	Synchronize with K4805 (HD_PLL)	T1
13	IC4603 - pin 101	No output	T1
14	IC4603 - pin 98	Clock signal that synchronizes with K4805 (HD_PLL)	T1
15	K5315 (HD_SEL)	Synchronize with K4805 (HD_PLL) and frequency is 4 times.	T1
16	CN5702 - pin 26	Do not synchronize with K4805 (HD_PLL)	T1
17	K5314 (DE_SEL)	Synchronize with K4805 (HD_PLL) and frequency is 4 times.	T1
18	CN5702 - pin 24	Do not synchronize with K4805 (HD_PLL)	T1
19	IC4803 - pin 140	Synchronize with K4805 (HD_PLL) and frequency is 1/4 times.	T1
20	K5317 (HD_SEL)	Synchronize with K4805 (HD_PLL)	T1
21	IC4803 - pin 11	Synchronize with IC4802 - pin 13	T2
22	K5316 (VD_SEL)	Synchronize with IC4802 - pin 13	T2
23	CN5702 - pin 28	Synchronize with IC4802 - pin 13	T2
24	IC4803 - pin 139	Synchronize with IC4802 - pin 13	T2
25	K4806	Synchronize with IC4802 - pin 13	T2
26	IC4402 - pin 31	Synchronize with IC4802 - pin 13	T2
27	K4603 (Y_SIGNAL)	Synchronize with IC4802 - pin 13	T2
28	K5314 (DE_SEL) K5315 (HD_SEL) K5316 (VD_SEL) K5317 (HD_30)	K5314 (DE_SEL) is fixed to "L" level in the PC signal indication. K5315 (HD_SEL) and k 5317 (HD _ 30) synchronize with K5316 (VD_SEL).	K5316 (VD_SEL)
29	K5314 (DE_SEL) K5315 (HD_SEL) K5316 (VD_SEL) K5317 (HD_30)	Magnified K5316 (VD_SEL) section of No. 28. K5315 (HD_SEL) and K5317 (HD _ 30) are the same frequency in the PC signal indication.	K5316 (VD_SEL)
30	K5314 (DE_SEL) K5315 (HD_SEL) K5316 (VD_SEL) K5317 (HD_30)	K5314 (DE_SEL) is not fixed to "L" level in the PC signal indication by the DVI input. K5314 (DE_SEL), K5315 (HD_SEL) and k 5317 (HD_30) synchronize with K5316 (VD_SEL).	K5316 (VD_SEL)
31	K5314 (DE_SEL) K5315 (HD_SEL) K5316 (VD_SEL) K5317 (HD_30)	Magnified K5316 (VD_SEL) section of No. 30. K5314 (DE_SEL), K5315 (HD_SEL) and K5317 (HD_30) are the same frequency in the PC signal indication by the DVI input.	K5316 (VD_SEL)
32	K5314 (DE_SEL) K5315 (HD_SEL) K5316 (VD_SEL) K5317 (HD_30)	K5314 (DE_SEL) is not fixed to "L" level in the 1125i indication. K5314 (DE_SEL), K5315 (HD_SEL) and k 5317 (HD _ 30) synchronize with K5316 (VD_SEL).	K5316 (VD_SEL)
33	K5314 (DE_SEL) K5315 (HD_SEL) K5316 (VD_SEL) K5317 (HD_30)	Magnified K5316 (VD_SEL) section of No. 32. Frequency of 2 times of K5314 (DE_SEL), K5315 (HD_SEL) and K5317 (HD_30) in the 1125i indication.	K5316 (VD_SEL)

1 **CN4103 - pin 2** V: 200mV/div. H: 10µsec/div. 	**6** **IC5301 - pin 276** V: 1V/div. H: 10µsec/div. 	**11** **IC4603 - pin 113** V: 2V/div. H: 10µsec/div. 	**16** **CN5702 - pin 26** V: 2V/div. H: 10µsec/div. 
2 **CN4004 - pin 1** V: 200mV/div. H: 10µsec/div. 	**7** **IC5701 - pin 30** V: 1V/div. H: 10µsec/div. 	**12** **IC4603 - pin 103** V: 2V/div. H: 10µsec/div. 	**17** **K5315** V: 2V/div. H: 10µsec/div. 
3 **IC4402 - pin 17** V: 1V/div. H: 10µsec/div. 	**8** **IC4802 - pin 4** V: 2V/div. H: 10µsec/div. 	**13** **IC4603 - pin 101** V: 2V/div. H: 10µsec/div. 	**18** **CN5702 - pin 24** V: 2V/div. H: 10µsec/div. 
4 **IC4603 - pin 133** V: 1V/div. H: 10µsec/div. 	**9** **IC4802 - pin 15** V: 2V/div. H: 10µsec/div. 	**14** **IC4603 - pin 98** V: 2V/div. H: 80msec/div. 	**19** **IC4803 - pin 140** V: 2V/div. H: 100µsec/div. 
5 **IC4603 - pin 70** V: 1V/div. H: 10µsec/div. 	**10** **IC4402 - pin 31** V: 2V/div. H: 10µsec/div. 	**15** **K5315** V: 2V/div. H: 10µsec/div. 	**20** **K5317** V: 2V/div. H: 10µsec/div. 

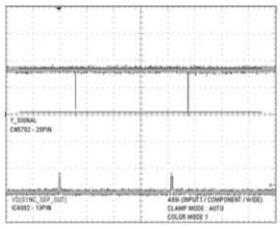
21 **IC4803 - pin 11**
V: 200mV/div. H: 4msec/div.



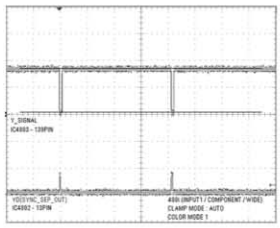
22 **K5316**
V: 200mV/div. H: 4msec/div.



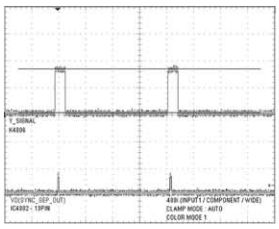
23 **CN5702 - pin 28**
V: 200mV/div. H: 4msec/div.



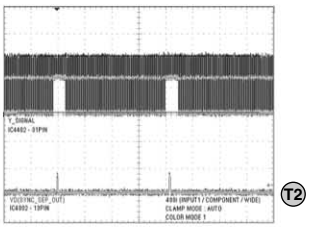
24 **IC4803 - pin 139**
V: 200mV/div. 4msec/div.



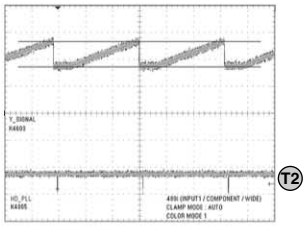
25 **K4806**
V: 200mV/div. H: 4msec/div.



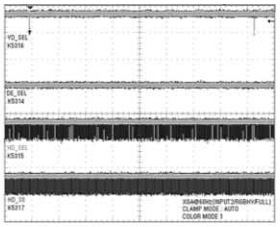
26 **IC4402 - pin 31**
V: 200mV/div. H: 4msec/div.



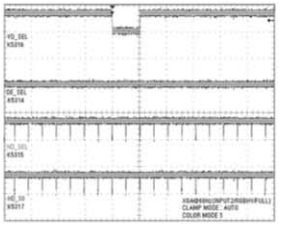
27 **K4603 (Y_SIGNAL)**
V: 1V/div. H: 20µsec/div.



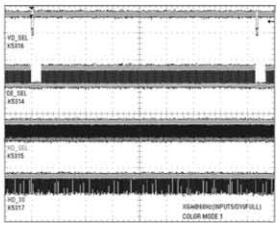
28 **K5314 (DE_SEL), K5315 (HD_SEL), K5316 (VD_SEL), K5317 (HD_30)**
V: 5V/div. H: 2msec/div.



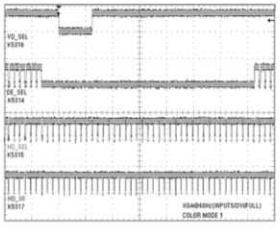
29 **K5314 (DE_SEL), K5315 (HD_SEL), K5316 (VD_SEL), K5317 (HD_30)**
V: 5V/div. H: 40µsec/div.



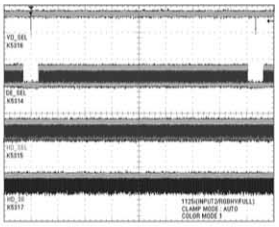
30 **K5314 (DE_SEL), K5315 (HD_SEL), K5316 (VD_SEL), K5317 (HD_30)**
V: 5V/div. H: 2msec/div.



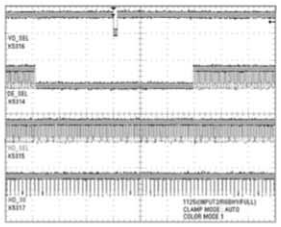
31 **K5314 (DE_SEL), K5315 (HD_SEL), K5316 (VD_SEL), K5317 (HD_30)**
V: 5V/div. H: 100µsec/div.



32 **K5314 (DE_SEL), K5315 (HD_SEL), K5316 (VD_SEL), K5317 (HD_30)**
V: 5V/div. H: 2msec/div.



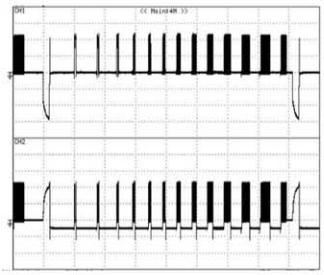
33 **K5314 (DE_SEL), K5315 (HD_SEL), K5316 (VD_SEL), K5317 (HD_30)**
V: 5V/div. H: 200µsec/div.



Sustain Waveforms

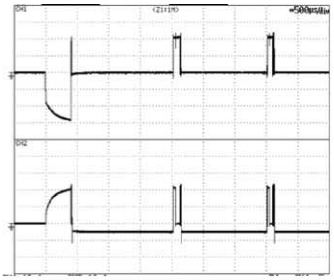
● Sustain Waveform (1 field)

ch 1 : K3107 (X.PSUS) - K3201 (SUSGND)
V: 100V/div. H: 2msec/div.
ch 2 : K2220 (Y.PSUS) - K2219 (SUSGND)
V: 100V/div. H: 2msec/div.



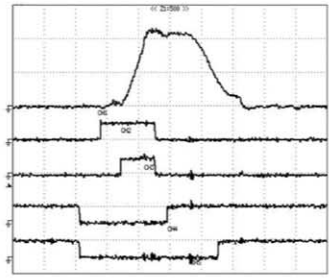
● Sustain Waveform (1 sub-field)

ch 1 : K3107 (X.PSUS) - K3201 (SUSGND)
V: 100V/div. H: 500µsec/div.
ch 2 : K2220 (Y.PSUS) - K2219 (SUSGND)
V: 100V/div. H: 500µsec/div.



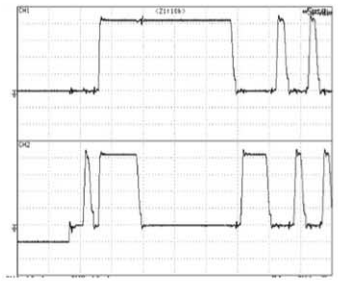
● Sustain Waveform

ch 1 : K2220 (Y.PSUS) - K2219 (SUSGND)
V: 100V/div. H: 500nsec/div.
ch 2 : K2028 (YSUS_U) - K2024 (DGND)
V: 10V/div. H: 500nsec/div.
ch 3 : K2027 (YSUS_B) - K2024 (DGND)
V: 10V/div. H: 500nsec/div.
ch 4 : K2029 (YSUS_D) - K2024 (DGND)
V: 10V/div. H: 500nsec/div.
ch 5 : K2037 (YSUS_G) - K2024 (DGND)
V: 10V/div. H: 500nsec/div.



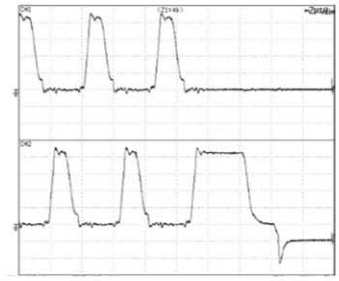
● Sustain Waveform (sustain)

ch 1 : K3107 (X.PSUS) - K3201 (SUSGND)
V: 50V/div. H: 5µsec/div.
ch 2 : K2220 (Y.PSUS) - K2219 (SUSGND)
V: 50V/div. H: 5µsec/div.



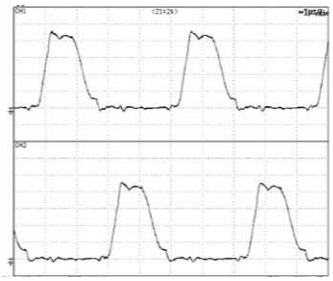
● Sustain Waveform (sustain)

ch 1 : K3107 (X.PSUS) - K3201 (SUSGND)
V: 50V/div. H: 2µsec/div.
ch 2 : K2220 (Y.PSUS) - K2219 (SUSGND)
V: 50V/div. H: 2µsec/div.



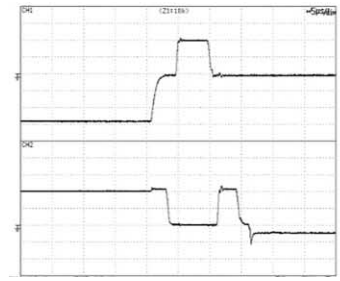
● Sustain Waveform (1 field)

ch 1 : K3107 (X.PSUS) - K3201 (SUSGND)
V: 50V/div. H: 1µsec/div.
ch 2 : K2220 (Y.PSUS) - K2219 (SUSGND)
V: 50V/div. H: 1µsec/div.



● Sustain Waveform (reset pulse)

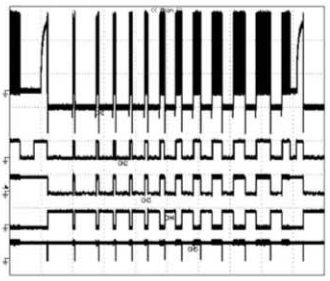
ch 1 : K3107 (X.PSUS) - K3201 (SUSGND)
V: 100V/div. H: 5µsec/div.
ch 2 : K2220 (Y.PSUS) - K2219 (SUSGND)
V: 100V/div. H: 5µsec/div.



Drive Pulse Waveforms

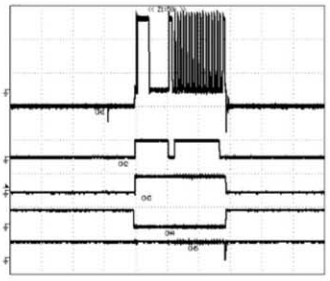
● Y Drive Pulse Control Waveform (1 field)

ch 1 : K2220 (Y.PSUS) - K2219 (SUSGND)
V: 100V/div. H: 2msec/div.
ch 2 : K2039 (YCP_MSK) - K2024 (DGND)
V: 10V/div. H: 2msec/div.
ch 3 : K2040 (YSUS_MSK) - K2024 (DGND)
V: 10V/div. H: 2msec/div.
ch 4 : K2041 (OFS) - K2024 (DGND)
V: 10V/div. H: 2msec/div.
ch 5 : K2053 (SOFT_D) - K2024 (DGND)
V: 10V/div. H: 2msec/div.



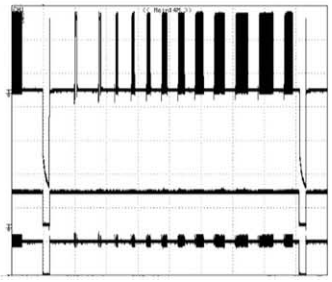
● Y Drive Pulse Control Waveform (1 sub-field)

ch 1 : K2220 (Y.PSUS) - K2219 (SUSGND)
V: 100V/div. H: 50µsec/div.
ch 2 : K2039 (YCP_MSK) - K2024 (DGND)
V: 10V/div. H: 50µsec/div.
ch 3 : K2040 (YSUS_MSK) - K2024 (DGND)
V: 10V/div. H: 50µsec/div.
ch 4 : K2041 (OFS) - K2024 (DGND)
V: 10V/div. H: 50µsec/div.
ch 5 : K2053 (SOFT_D) - K2024 (DGND)
V: 10V/div. H: 50µsec/div.



● X Drive Pulse Control Waveform (1 field)

ch 1 : K3107 (X.PSUS) - K3201 (SUSGND)
V: 100V/div. H: 2msec/div.
ch 2 : K3017 (XCP_MSK) - K3005 (DGND)
V: 10V/div. H: 2msec/div.
ch 3 : K3015 (XSUS_MSK) - K3005 (DGND)
V: 5V/div. H: 2msec/div.

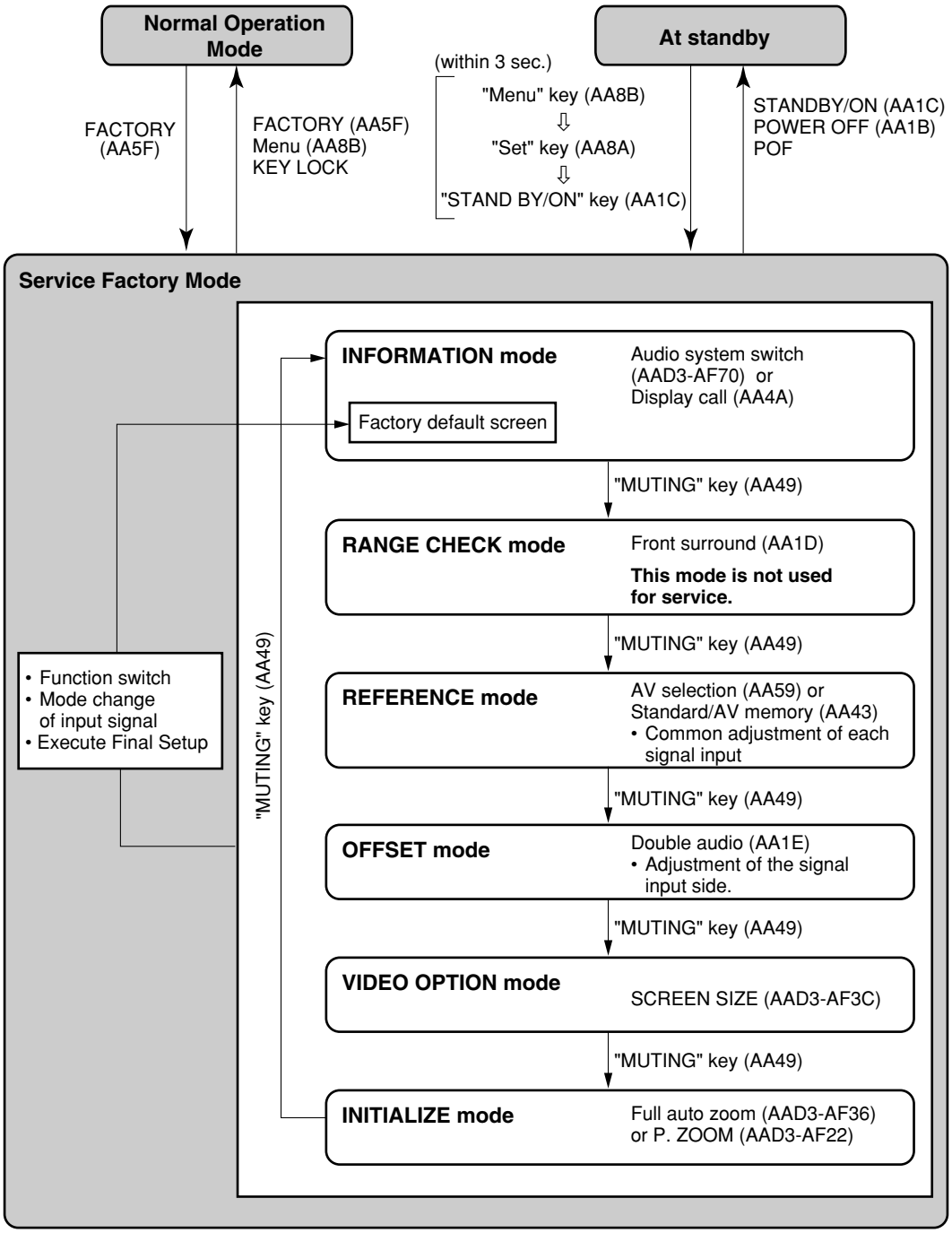


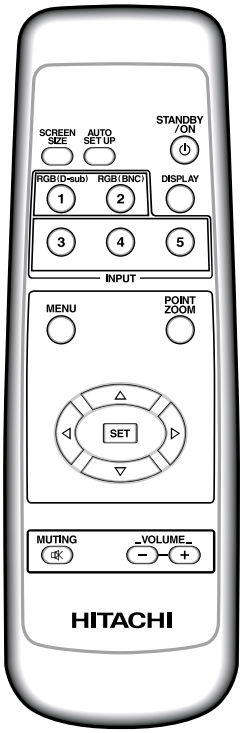
6. ADJUSTMENT

6.1 SERVICE FACTORY MODE

Perform the operations of Service Factory mode using the Remote Control Unit provided with the Plasma Display (AXD1469).

6.1.1 State Transition Diagram





Remote control unit
(AXD1469)

Caution of Operation of the Remote Control Unit

- In the service factory mode, use the key which does not exist in a remote control unit (AXD1469) attached to this product as the direct selection key of item when selects each item.
- When operate the service factory mode with the attached remote control unit in this product, selection is possible with the following key cyclically.
  Large item selection: MUTE key
  Selection except large item: UP (▲), DOWN (▼) keys

Operation When Entered the Service Factory Mode

① Setting value of menu mode

- Reset "PICTURE" item (center value).
  Notes : Adjustment value of "PICTURE" to reset is limited to the following face.
  At VIDEO: Current signal mode of the selected input function
  At PC: Correspond to the history of the signal mode input into past, "Table A to H ".
- Reset all "SCREEN" items (center value).
  Note: Adjustment value of "SCREEN" to reset is limited to the current signal mode of the selected input function.
  Supplement: If execute FINAL SET UP or PICTURE DEFAULT, minimize the adjustment value of menu mode here so that it becomes the center value.
- "SET UP" and "OPTION" of menu mode are maintained except items as follows.
  COLOR TEMP: It becomes "MIDDLE" setting
  AUTO POWER OFF/POWER MANAGEMENT: Setting is maintained, but do not work

② Adjustment value of the integrator mode

- Adjustment values of "PICTURE" and "WHITE BAL" select the adjustment values which are applicable to the current input function signal mode.
  Notes : Adjustment value of "PICTURE" and "WHITE BAL" to reset is limited to the following face.
  At VIDEO: Current signal mode of the selected input function
  At PC: Correspond to the history of the signal mode input into past, "Table A to H ".
- SCREEN setting value is maintained.
- "SET UP" and "OPTION" of integrator menu are maintained except items as follows.
  SIDE MASK LEVEL: Adjustment value is reset, and it becomes default value.
  FULL MASK which was set with the integrator mode: Release
  OFF TIMER: Release
- COLOR MODE (integrator menu) setting maintains setting in the integrator menu.

③ Others

- When input signal mode changed, change setting, and display default screen (INFORMATION-VERSION) of the service factory mode. Maintain the service factory mode.
  Note: At a point in time when the input signal mode changed, perform an operation of ① and ②.
- Switch it in selected FUNCTION when switched FUNCTION. Then display default screen (INFORMATION-VERSION) of the service factory mode, and maintain the service factory mode.
  Note: At the point that switched FUNCTION, perform an operation of ① and ②.
- Perform COLOR DETECT setting with "COLOR SYSTEM" of set menu mode.
- Only address 0100-01FF of module microcomputer / EEPROM copy/updates the data to the module microcomputer area of main microcomputer EEPROM.
- Various protection feature of the panel (Still picture detection, Block brightness detection and SCAN IC protection feature) turns OFF.
  Notes: When each protection feature turns OFF once and released the factory mode, maintain it. Protection feature turns ON by turning ON from POWER OFF. Therefore turn ON from POWER OFF by all means in order to operate protection feature when released the factory mode.

- In the no input, apply playback and non-correspondence PC signal input, accepts only the setting item that does not depend on a signal mode. (But refer to the item "MASK1 and MASK2" about MASK setting.)
  An item depending on the signal mode turns the display color to gray and it cannot change the setting.

6.1.2 Adjustment Items Table of Service Factory

SLOT

	Name	OSD Display Name	RS-232C Command	Service Factory Operation	Adjustment Range (OFFSET Reference Value)
CD	YDL	Y-DELAY	YDL	REF/OFS-SLOT-1	0 to 15 [8]
	YOUTLEV	Y-OUT LEVEL	YOL	REF/OFS-SLOT-2	0 to 63 [32]
	TINT	CD TINT	CTI	REF/OFS-SLOT-3	0 to 63 [32]
	CrOFFSET	CDR OFFSET	CDR	REF/OFS-SLOT-4	0 to 15 [8]
	CbOFFSET	CDB OFFSET	CDB	REF/OFS-SLOT-5	0 to 15 [8]
EXP	R-Y_LEVEL	R-Y LEVEL	LRY	REF/OFS-SLOT-6	0 to 255 [128]
	B-Y_LEVEL	B-Y LEVEL	LBY	REF/OFS-SLOT-7	0 to 255 [128]

RGB1

	Name	OSD Display Name	RS-232C Command	Service Factory Operation	Adjustment Range (OFFSET Reference Value)
MATRIX	PICTURE	MAT CONT	MCT	REF/OFS-RGB1-1	0 to 63 [32]
	BRIGHT	MAT BRIGHT	MBR	REF/OFS-RGB1-2	0 to 63 [32]
	COLOR	MAT COLOR	MCL	REF/OFS-RGB1-3	0 to 63 [32]
	HUE	MAT TINT	MTI	REF/OFS-RGB1-4	0 to 63 [32]
AD	MAINCONTRAST	AD MAIN CONT	MCA	REF/OFS-RGB1-5	0 to 255 [128]
	SUBRCONTRAST	AD R HIGH	GHA	REF/OFS-RGB1-6	0 to 255 [128]
	SUBGCONTRAST	AD G HIGH	BHA	REF/OFS-RGB1-7	0 to 255 [128]
	SUBBCONTRAST	AD B HIGH	RHA	REF/OFS-RGB1-8	0 to 255 [128]
	BRIGHTR	AD R LOW	GLA	REF/OFS-RGB1-9	0 to 255 [128]
	BRIGHTG	AD G LOW	BLA	REF/OFS-RGB1-10	0 to 255 [128]
	BRIGHTB	AD B LOW	RLA	REF/OFS-RGB1-11	0 to 255 [128]

RGB2

	Name	OSD Display Name	RS-232C Command	Service Factory Operation	Adjustment Range (OFFSET Reference Value)
IC102 W/B	COLOR	COLOR	COL	REF/OFS-RGB2-1	0 to 255 [128]
	TINT	TINT	TNT	REF/OFS-RGB2-2	0 to 255 [128]
IC30 W/B	MCONTRAST	CONTRAST	CNT	REF/OFS-RGB2-3	0 to 255 [128]
	MBRIGHT	BRIGHT	BRT	REF/OFS-RGB2-4	0 to 255 [128]
	R HIGH	R. HIGH	RHI	REF/OFS-RGB2-5	0 to 255 [255]
	G HIGH	G. HIGH	GHI	REF/OFS-RGB2-6	0 to 255 [255]
	B HIGH	B. HIGH	BHI	REF/OFS-RGB2-7	0 to 255 [255]
	R LOW	R. LOW	RLW	REF/OFS-RGB2-8	0 to 255 [128]
	G LOW	G. LOW	GLW	REF/OFS-RGB2-9	0 to 255 [128]
	B LOW	B. LOW	BLW	REF/OFS-RGB2-10	0 to 255 [128]

DIGITAL

	Name	OSD Display Name	RS-232C Command	Service Factory Operation	Adjustment Range (OFFSET Reference Value)
DIGITAL	PANEL R-HIGH	PANEL R-HIGH	PRH	REF/OFS-DIGITAL-1	0 to 255 [255]
	PANEL G-HIGH	PANEL G-HIGH	PGH	REF/OFS-DIGITAL-2	0 to 255 [255]
	PANEL B-HIGH	PANEL B-HIGH	PBH	REF/OFS-DIGITAL-3	0 to 255 [255]
	PANEL R-LOW	PANEL R-LOW	PRL	REF/OFS-DIGITAL-4	0 to 999 [512]
	PANEL G-LOW	PANEL G-LOW	PGL	REF/OFS-DIGITAL-5	0 to 999 [512]
	PANEL B-LOW	PANEL B-LOW	PBL	REF/OFS-DIGITAL-6	0 to 999 [512]
	ABL LEVEL	ABL LEVEL	ABL	REF/OFS-DIGITAL-7	0 to 255 [128]
	X-SUS-B	X-SUS-B	XSB	REF-DIGITAL-8	4 to 12
	X-SUS-G	X-SUS-G	XSG	REF-DIGITAL-9	4 to 12
	Y-SUS-B	Y-SUS-B	YSB	REF-DIGITAL-10	4 to 12
	Y-SUS-G	Y-SUS-G	YSG	REF-DIGITAL-11	4 to 12
	V-SUS	V-SUS	VSU	REF-DIGITAL-12	0 to 255
	V-OFFSET	V-OFFSET	VOF	REF-DIGITAL-13	0 to 255

SIDE MASK LEVEL (VIDEO OPTION)

	Name	OSD Display Name	RS-232C Command	Service Factory Operation	Adjustment Range (OFFSET Reference Value)
IC30	R SIDE MASK LEV	R SIDE MASK LEV	RSL	VOP-M LEV-1	0 to 255
	G SIDE MASK LEV	G SIDE MASK LEV	GSL	VOP-M LEV-2	0 to 255
	B SIDE MASK LEV	B SIDE MASK LEV	BSL	VOP-M LEV-3	0 to 255

COLOR TEMP (VIDEO OPTION)

	Name	OSD Display Name	RS-232C Command	Service Factory Operation	Adjustment Range (OFFSET Reference Value)
IC102	COLOR	COLOR		VOP-CT-3	0 to 255 [128]
	TINT	TINT		VOP-CT-4	0 to 255 [128]
IC30	MCONTRAST	CONTRAST		VOP-CT-1	0 to 255 [128]
	MBRIGHT	BRIGHT		VOP-CT-2	0 to 255 [128]
	R HIGH	R. HIGH		VOP-CT-5	0 to 255 [255]
	G HIGH	G. HIGH		VOP-CT-6	0 to 255 [255]
	B HIGH	B. HIGH		VOP-CT-7	0 to 255 [255]
	R LOW	R. LOW		VOP-CT-8	0 to 255 [128]
	G LOW	G. LOW		VOP-CT-9	0 to 255 [128]
	B LOW	B. LOW		VOP-CT-10	0 to 255 [128]

COLOR MODE2 (VIDEO OPTION)

	Name	OSD Display Name	RS-232C Command	Service Factory Operation	Adjustment Range (OFFSET Reference Value)
IC102	COLOR	COLOR		VOP-CM2-3	0 to 255 [128]
	TINT	TINT		VOP-CM2-4	0 to 255 [128]
IC30	MCONTRAST	CONTRAST		VOP-CM2-1	0 to 255 [128]
	MBRIGHT	BRIGHT		VOP-CM2-2	0 to 255 [128]
	R HIGH	R. HIGH		VOP-CM2-5	0 to 255 [255]
	G HIGH	G. HIGH		VOP-CM2-6	0 to 255 [255]
	B HIGH	B. HIGH		VOP-CM2-7	0 to 255 [255]
	R LOW	R. LOW		VOP-CM2-8	0 to 255 [128]
	G LOW	G. LOW		VOP-CM2-9	0 to 255 [128]
	B LOW	B. LOW		VOP-CM2-10	0 to 255 [128]

Calculation of Adjustment Value in the Service Factory Mode

- As for the adjustment value in the service factory mode, it becomes an actual adjustment value that subtracted OFFSET reference value (value in [ ] of the above table) from the value that added a REFERENCE adjustment value and an OFFSET adjustment value.
  Notes: It becomes the adjustment value the value that adjusted it with REFERENCE because there is not an OFFSET adjustment value as forR SIDE MASK LEV, G SIDE MASK LEV and B SIDE MASK LEV of item SIDE MASK LEVEL and X-SUS-B, X-SUS-G, Y-SUS-B, Y-SUS-G, V-SUS and V-OFFSET of item DIGITAL.
- As for COLOR MODE2 and COLOR TEMP, it becomes OFFSET value of each the value that subtracted OFFSET reference value (a value in [ ] of the above table) from a adjustment value of selected mode. It becomes a adjustment value of the last RGB 2 device (IC30 and IC102) the value that added this OFFSET value to each adjustment item of RGB 2.

Actual Calculation Example

- Each adjustment value of SLOT/ RGB 1/RGB2/DIGITAL
  (REFERENCE value)
  +
  { (OFFSET value) – [OFFSET reference value] } ... Calculation of a value to add as OFFSET

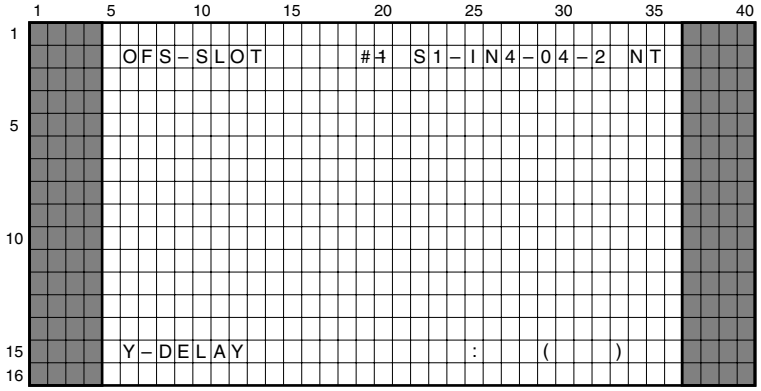
- COLOR MODE2 OFFSET value
  { (COLOR MODE2 adjustment value) - [OFFSET reference value] } ... Calculation of a value to add as OFFSET for COLOR MODE2
  Note: Add it only in COLOR MODE2 selection.

• COLOR TEMP OFFSET value
  {(COLOR TEMP adjustment value) - [OFFSET reference value] } ... Calculation of a value to add as OFFSET for COLOR TEMP
Note: Add it only in COLOR TEMP 1,2,4 and 5 selection.

Perform the addition in the normal operation, menu mode and COLOR TEMP adjustment mode of the service factory mode (in item VIDEO OPTION), and add OFFSET value of selected setting.
COLOR TEMP OFFSET does not add it in order to work by COLOR TEMP 3 setting in the integrator mode and in the service factory mode except COLOR TEMP adjustment mode.

6.1.4 Display Description of Service Factory Menu

1. In Adjustment Item



Display color : White
Halftone : Blue (second row/15th row for each 5 to 36 columns)
When there is not item which is applicable to the input signal mode, display the adjustment value with "———" (————)", and perform the item indication color to gray.

- Second row / 6th to 16th columns : Display the upper layer of selection item • • • At the Service factory mode
  Second row / 6th to 7th columns : Display the ID No. • • • At the RS-232C factory mode
  Second row / 9th to 16th columns : Display the upper layer of selection item • • • At the RS-232C factory mode
- Second row / 19th to 20th columns : Current color mode setting
- Second row / 22th to 23th columns : Current slot type

Slot Type or Model Type	At CMPAV05 is mounted with	No SLOT
Display	S1	NO

- Second row / 25th to 27th columns : Current function
- Second row / 29th to 32th columns : Current signal mode
- Second row / 32th columns : Current Screen size (Refer to the "classification of input signal" with regard to each numeric value.)

Current signal mode displayes the signal mode of any of mode 03, mode 31, mode E1, mode 61 or mode 71.

Setting	Signal Mode Display
VIDEO	03
VGA	31
WVGA	E1
XGA	61
WXGA	71

Current signal mode displayes the signal mode of any of mode 12 or mode 13.

HDTV Mode Setting (Integrator Menu)	Signal Mode Display
1080i	12
1035i	13

Display in the no signal and non-correspondence signal

Signal Mode Display	Signal Definition
FB	OUT OF RANGE (The signal that the measurement is impossible with the main microcomputer)
FC	OUT OF RANGE (In the video system signal when video signal does not input)
FD	OUT OF RANGE (In the non-correspondence signal at DVI input)
FE	OUT OF RANGE (When the measurement is possible with the main microcomputer, and non-correspondence signal that is not applicable to FC and FD)
FF	No signal

- Second row / 33th column : Current input form

Input Form	Component	Video–RGB	Composite	Y/C
Display	#	@	*	/

Non-display excepting above form (blank).

- Second row / 34th to 35th columns : Current color system

Color System	NTSC	PAL	SECAM	4.43NTSC	PAL-M	PAL-N	BLACK/WHITE
Display	NT	PL	SC	4N	PM	PN	BW

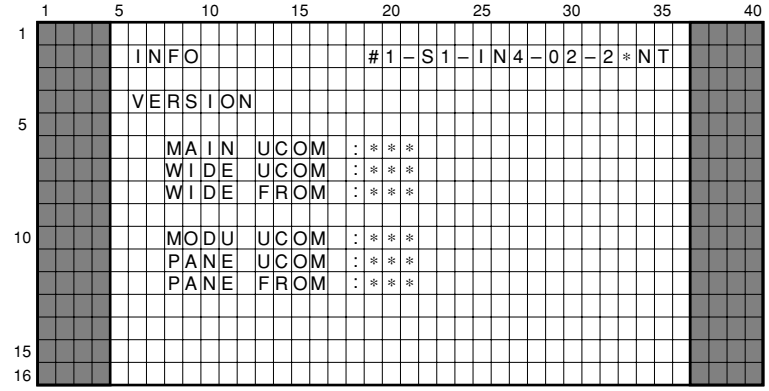
Non-display it (blank) when a case except COLOR SYSTEM mentioned above and COLOR SYSTEM setting is fixed.

- 15th row / 6th to 24th columns : Current item selection
- 15th row / 26th to 35th columns :

RANGE CHECK selection : Current selecting value

1. At REFERENCE selection : Adjustment value
2. At OFFSET selection : OFFSET value (adjustment value) * Adjustment value is REFERENCE value + OFFSET value.
3. At VIDEO OPTION selection : No display
   At INITIALIZE selection : The setting that is selected. (There is no display in the item which there is the lower layer.)

2. INFORMATION



●Basic Operation

• Display the state of each item

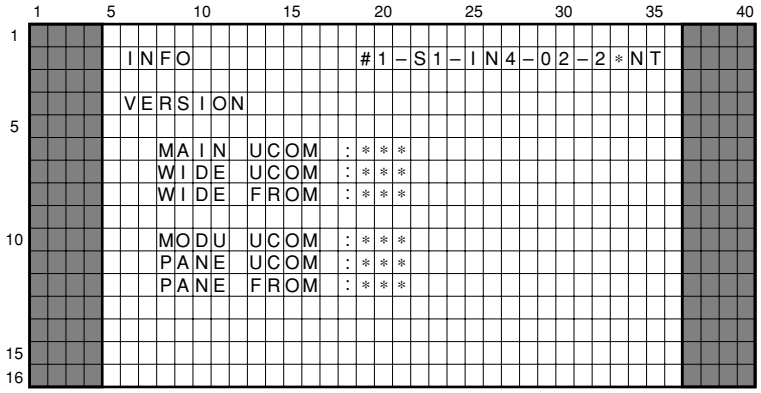
Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	VERSION	Display the each information	Main, Wide, module and panel microcomputer : Ver Wide flash (OSD) / Panel flash (Sequence) : Ver	×
AA02	2	PD INFO		Past eight times / Place (1st, 2nd) / Time Stamp	×
AA03	3	NG INFO		AUDIO/FAN/MODULE/PANEL/WIDE/ MAIN IIC/MODULE IIC/DEW	×
AA04	4	TEMPERATURE		1/2/3/FAN output	×
AA05	5	MEMO		Display MEMO	×
AA06	6				
AA07	7				
AA08	8				
AA09	9				
AA00	10				
AA46	11				
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫				
AA95	≪				
AA8A	SET				
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	RANGE CHECK		

● Operating specification

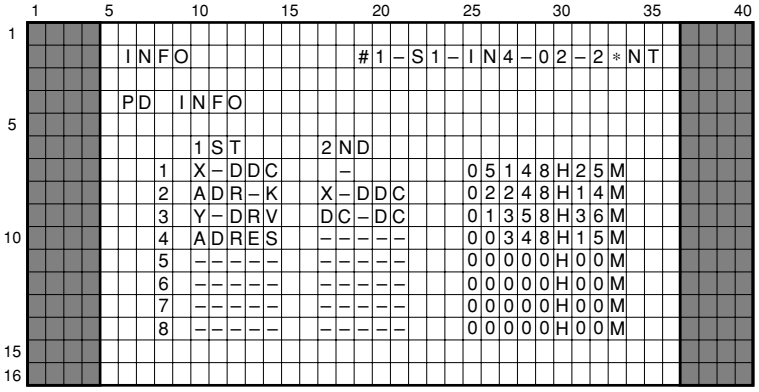
• Start from VERSION (Key1) when shifted to this setting screen.
• When each key was pressed, follow the required operation.
Note : Perform VERSION display as the default screen of the service factory mode.

3. OSD Display in INFORMATION

① VERSION



② PD INFO.

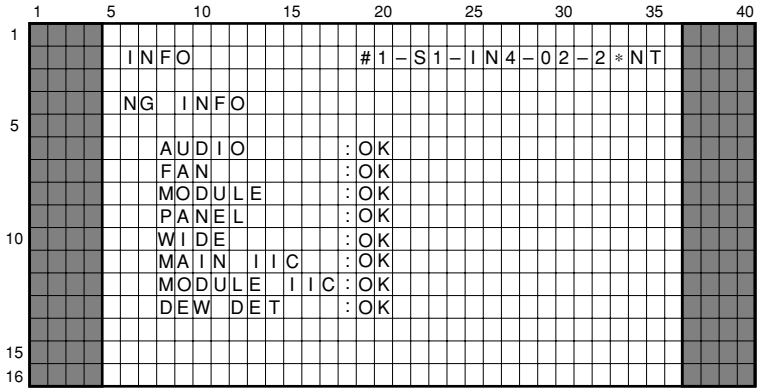


Display the power down point (1st or 1st, 2nd) and an hour meter of the time.
Perform display to maximum eight times, and if display became more than eight times, perform clear in order from the old information, and update it to the latest information.

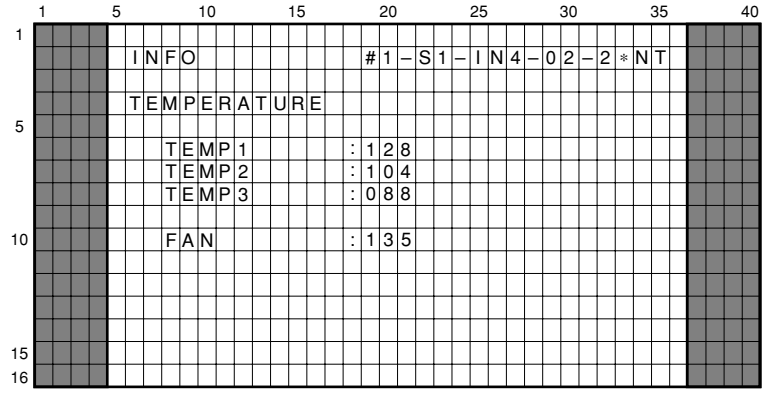
Display details at PD INFORMATION

	Display	PD Point		Display	PD Point
1	X-DRV	X-DRIVE	5	ADRES	ADDRESS junction
2	X-DDC	X-DC/DC CONVERTER	6	ADR-K	ADDRESS resonance
3	Y-DRV	Y-DRIVE	7	POWER	Power supply
4	Y-DDC	Y-DC/DC CONVERTER	8	DC-DC	DC/DC CONVERTER (DIGITAL)

③ NG INFO.



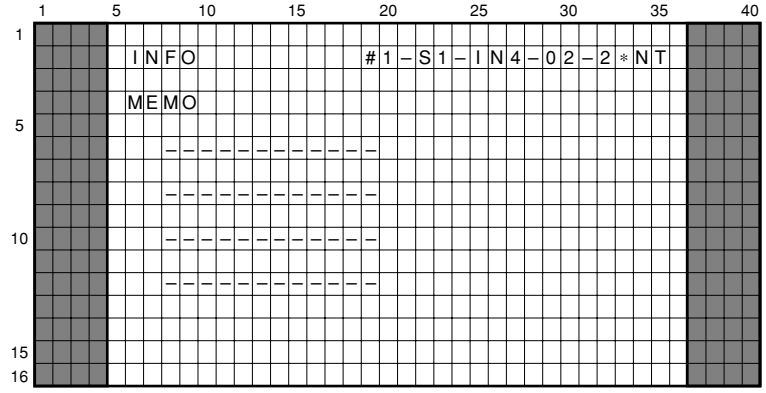
④ TEMPERATURE



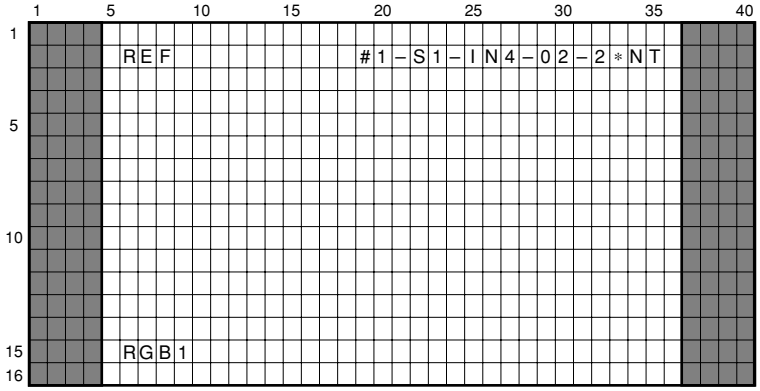
- Each display is the value of A/D input or D/A output of the microcomputer (0 to 255).
- Temperature sensor 1, 2 and 3
- FAN

Note: Refer to "Shut down diagnosis" in the "7.1.2 SHUTDOWN/POWER DOWN DIAGNOSIS BY LED DISPLAY" to calculate real sensor temperature from each indicated value.

⑤ MEMO



4. REFERENCE



Display color : White
Halftone : Blue (Second row / 15th row for each 5th to 36th columns)

●Basic Operation

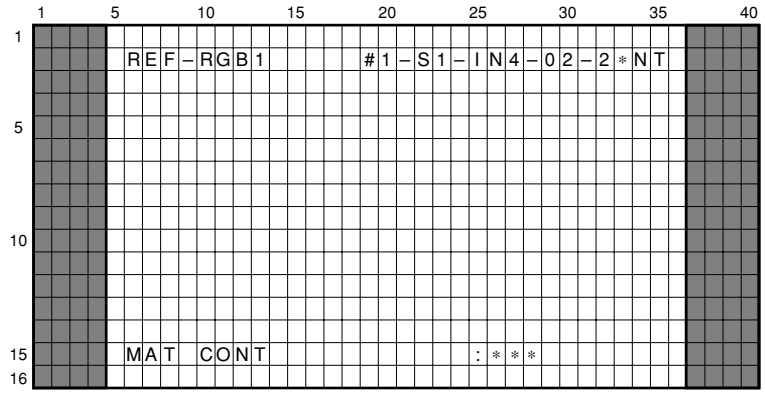
• Select the adjustment table.

Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	RGB1	Select the adjustment table		○
AA02	2	RGB2			○
AA03	3	DIGITAL			○
AA04	4	SLOT			○
AA05	5				
AA06	6				
AA07	7				
AA08	8				
AA09	9				
AA00	10				
AA46	11				
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select the upper item			
AA97	▼	Select the lower item			
AA94	≫				
AA95	≪				
AA8A	SET	Select the item and shift to lower layer			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment /setting screen	OFFSET		

●Operating specification

• Start from RGB 1 (Key 1) when shifted to this setting screen.
  However, the movement original item to be selected when shifted from the lower layer.
• When each key was pressed, follow the required operation.
• In INPUT5 (DVI) selection, impossible "RGB1" and "SLOT" selections (do not perform the display skip).
• When SLOT is not inserted and the external SLOT is inserted, selection of "SLOT" is impossible (do not perform the display skip).
• When selection of the item is impossible, turn the OSD display color into gray.

① REFERENCE — RGB1



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

●Basic Operation

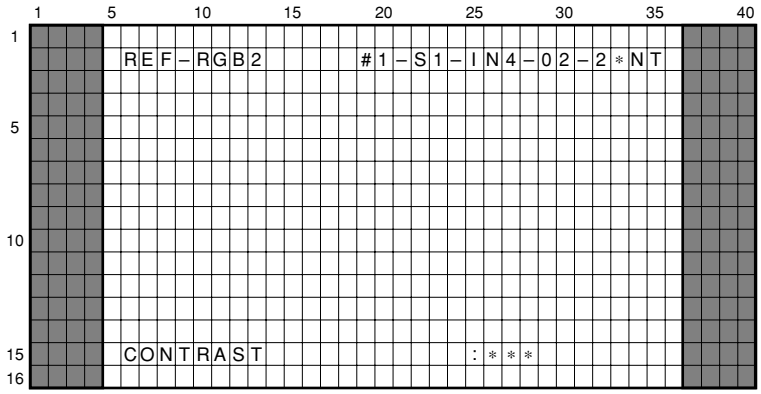
Perform the adjustment of each parameter.

Rem Code	Key Name	Function & Display	Description	Remark	Lower Layer
AA01	1	MAT CONT	Call the adjustment value and display it.		×
AA02	2	MAT BRIGHT			×
AA03	3	MAT COLOR			×
AA04	4	MAT TINT			×
AA05	5	AD MAIN CONT			×
AA06	6	AD R HIGH			×
AA07	7	AD G HIGH			×
AA08	8	AD B HIGH			×
AA09	9	AD R LOW			×
AA00	10	AD G LOW			×
AA46	11	AD B LOW			×
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫	Adjustment value of the parameter selecting goes up.			
AA95	≪	Adjustment value of the parameter selecting goes down.			
AA8A	SET	Store the adjustment value and shift to upper layer.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	OFFSET		

●Operating specification

- Start from MAT CONT (key 1) when shifted to this setting screen.
- When a key was pressed, follow the required operation after performing the last memory of current adjustment value.
- When there is not the item which is applicable to an input signal mode, display the adjustment value to "–––––", and turn the item display color into gray.

② REFERENCE — RGB2



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

●Basic Operation

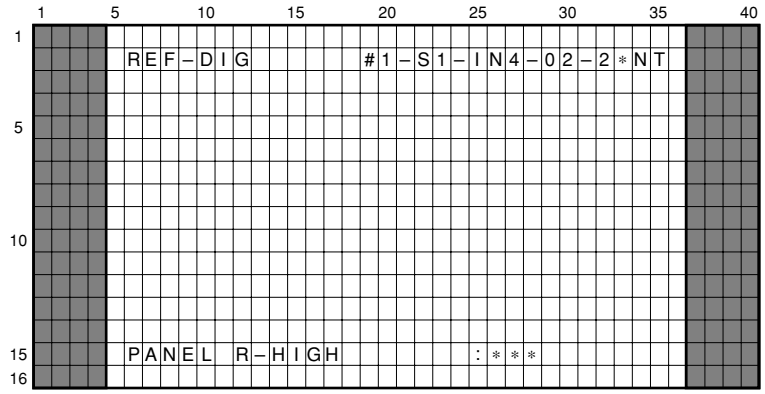
Perform the adjustment of each parameter.

Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	CONTRAST	Call the adjustment value and display it.		×
AA02	2	BRIGHT			×
AA03	3	COLOR			×
AA04	4	TINT			×
AA05	5	R HIGH			×
AA06	6	G HIGH			×
AA07	7	B HIGH			×
AA08	8	R LOW			×
AA09	9	G LOW			×
AA00	10	B LOW			×
AA46	11				
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫	Adjustment value of the parameter selecting goes up.			
AA95	≪	Adjustment value of the parameter selecting goes down.			
AA8A	SET	Store the adjustment value and shift to upper layer.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	OFFSET		

●Operating specification

- Start from CONTRAST (key 1) when shifted to this setting screen.
- When a key was pressed, follow the required operation after performing the last memory of current adjustment value.
- When there is not the item which is applicable to an input signal mode, display the adjustment value to "————", and turn the item display color into gray.

③ REFERENCE — DIGITAL



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

●Basic Operation

Perform the adjustment of each parameter.

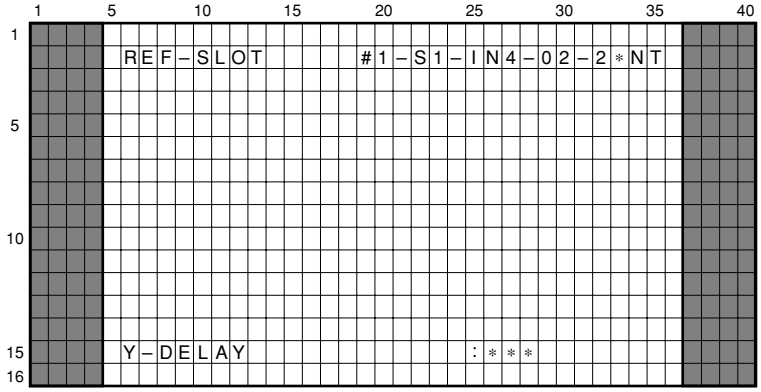
Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	PANEL R–HIGH	Call the adjustment value and display it.		×
AA02	2	PANEL G–HIGH			×
AA03	3	PANEL B–HIGH			×
AA04	4	PANEL R–LOW			×
AA05	5	PANEL G–LOW			×
AA06	6	PANEL B–LOW			×
AA07	7	ABL LEVEL			×
AA08	8	X–SUS–B			×
AA09	9	X–SUS–G			×
AA00	10	Y–SUS–B			×
AA46	11	Y–SUS–G			×
AA47	12	V–SUS			×
AA4D	BS1	V–OFFSET			×
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫	Adjustment value of the parameter selecting goes up.			
AA95	≪	Adjustment value of the parameter selecting goes down.			
AA8A	SET	Store the adjustment value and shift to upper layer.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	OFFSET		

●Operating specification

- Start from PANEL R-HIGH (key 1) when shifted to this setting screen.
- When a key was pressed, follow the required operation after performing the last memory of current adjustment value.
- When there is not the item which is applicable to an input signal mode, display the adjustment value to "–––––", and turn the item display color into gray.

④ REFERENCE — SLOT (At Connected SLOT ST1)

• This mode is effective for SLOT ST1 only in connection



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

• Basic Operation

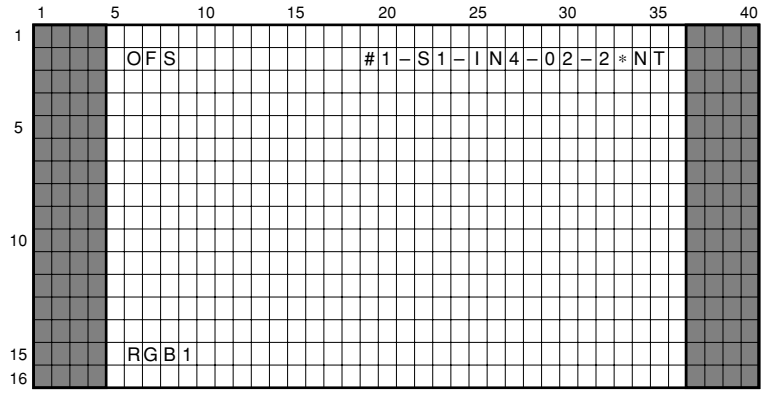
Perform the adjustment of each parameter.

Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	Y–DELAY	Call the adjustment value and display it.		×
AA02	2	Y–OUT LEVEL			×
AA03	3	CD TINT			×
AA04	4	CDR OFFSET			×
AA05	5	CDB OFFSET			×
AA06	6	R–Y LEVEL			×
AA07	7	B–Y LEVEL			×
AA08	8				
AA09	9				
AA00	10				
AA46	11				
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫	Adjustment value of the parameter selecting goes up.			
AA95	≪	Adjustment value of the parameter selecting goes down.			
AA8A	SET	Store the adjustment value and shift to upper layer.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	OFFSET		

• Operating specification

- Start from Y-DELAY (key 1) when shifted to this setting screen.
- When a key was pressed, follow the required operation after performing the last memory of current adjustment value.
- When there is not the item which is applicable to an input signal mode, display the adjustment value to "————", and turn the item display color into gray.

5. OFFSET



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

●Basic Operation

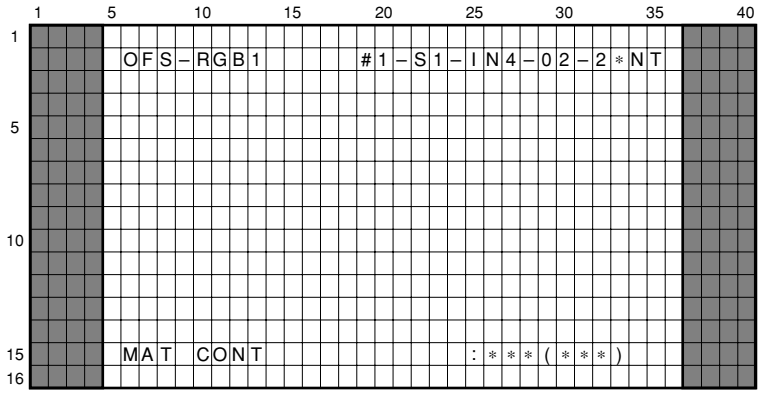
Select the adjustment table

Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	RGB1	Select the adjustment table		○
AA02	2	RGB2			○
AA03	3	DIGITAL			○
AA04	4	SLOT			○
AA05	5				
AA06	6				
AA07	7				
AA08	8				
AA09	9				
AA00	10				
AA46	11				
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select the upper item			
AA97	▼	Select the lower item			
AA94	≫				
AA95	≪				
AA8A	SET	Select the item and shift to lower layer			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	VIDEO OPTION		

●Operating specification

- Start from RGB 1 (Key 1) when shifted to this setting screen. However, the movement original item to be selected when shifted from the lower layer.
- When each key was pressed, follow the required operation.
- In INPUT5 (DVI) selection, impossible "RGB1" and "SLOT" selections (do not perform the display skip).
- When SLOT is not inserted and the external SLOT is inserted, selection of "SLOT" is impossible (do not perform the display skip).
- When selection of the item is impossible, turn the OSD display color into gray.
- Selection of each item is impossible at no input signal.

① OFFSET — RGB1



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

●Basic Operation

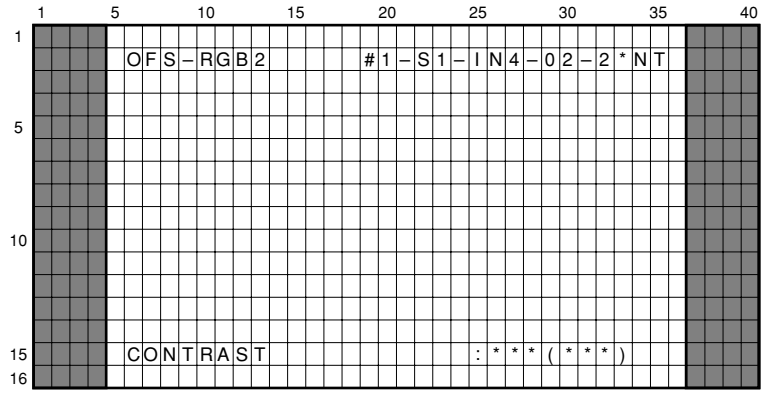
Perform the adjustment of each parameter.

Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	MAT CONT	Call the adjustment value and display it.		×
AA02	2	MAT BRIGHT			×
AA03	3	MAT COLOR			×
AA04	4	MAT TINT			×
AA05	5	AD MAIN CONT			×
AA06	6	AD R HIGH			×
AA07	7	AD G HIGH			×
AA08	8	AD B HIGH			×
AA09	9	AD R LOW			×
AA00	10	AD G LOW			×
AA46	11	AD B LOW			×
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫	Adjustment value of the parameter selecting goes up.			
AA95	≪	Adjustment value of the parameter selecting goes down.			
AA8A	SET	Store the adjustment value and shift to upper layer.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	VIDEO OPTION		

●Operating specification

- Start from MAT CONT (key 1) when shifted to this setting screen.
- When a key was pressed, follow the required operation after performing the last memory of current adjustment value.
- When there is not the item which is applicable to an input signal mode, display the adjustment value to "––––– (–––––)", and turn the item display color into gray.

② OFFSET — RGB2



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

●Basic Operation

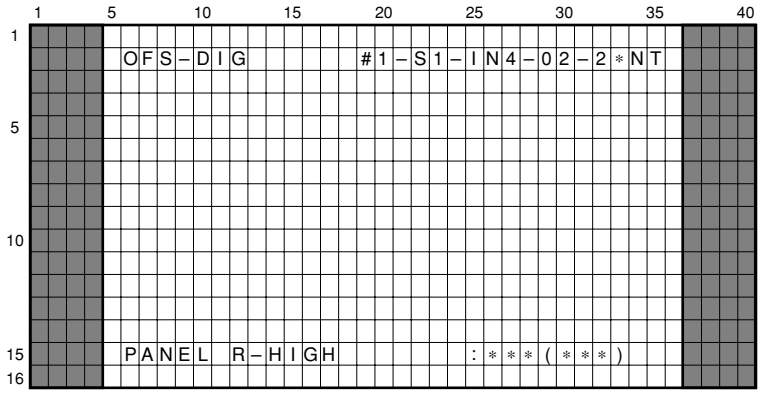
Perform the adjustment of each parameter.

Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	CONTRAST	Call the adjustment value and display it.		×
AA02	2	BRIGHT			×
AA03	3	COLOR			×
AA04	4	TINT			×
AA05	5	R HIGH			×
AA06	6	G HIGH			×
AA07	7	B HIGH			×
AA08	8	R LOW			×
AA09	9	G LOW			×
AA00	10	B LOW			×
AA46	11				
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫	Adjustment value of the parameter selecting goes up.			
AA95	≪	Adjustment value of the parameter selecting goes down.			
AA8A	SET	Store the adjustment value and shift to upper layer.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	VIDEO OPTION		

●Operating specification

- Start from CONTRAST (key 1) when shifted to this setting screen.
- When a key was pressed, follow the required operation after performing the last memory of current adjustment value.
- When there is not the item which is applicable to an input signal mode, display the adjustment value to "––––– (–––––)", and turn the item display color into gray.

③ OFFSET — DIGITAL



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

●Basic Operation

Perform the adjustment of each parameter.

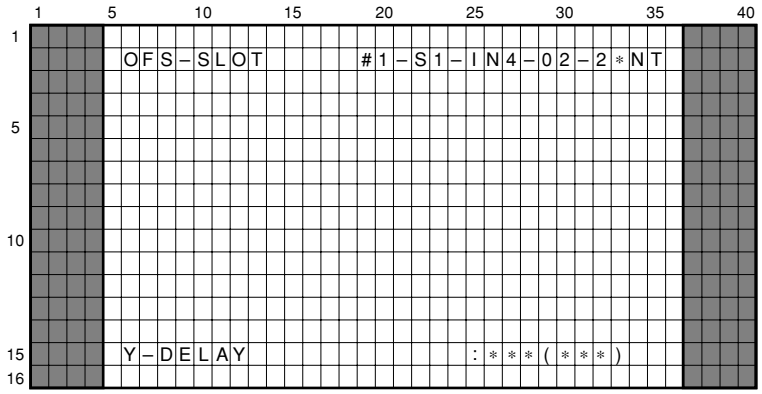
Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	PANEL R–HIGH	Call the adjustment value and display it.		×
AA02	2	PANEL G–HIGH			×
AA03	3	PANEL B–HIGH			×
AA04	4	PANEL R–LOW			×
AA05	5	PANEL G–LOW			×
AA06	6	PANEL B–LOW			×
AA07	7	ABL LEVEL			×
AA08	8	X–SUS–B	–	Selection is possible, and setting is impossible	×
AA09	9	X–SUS–G			×
AA00	10	Y–SUS–B			×
AA46	11	Y–SUS–G			×
AA47	12	V–SUS			×
AA4D	BS1	V–OFFSET			×
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫	Adjustment value of the parameter selecting goes up.			
AA95	≪	Adjustment value of the parameter selecting goes down.			
AA8A	SET	Store the adjustment value and shift to upper layer.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	VIDEO OPTION		

●Operating specification

- Start from PANEL R–HIGH (key 1) when shifted to this setting screen.
- When a key was pressed, follow the required operation after performing the last memory of current adjustment value.
- When there is not the item which is applicable to an input signal mode, display the adjustment value to "––––– (–––––)", and turn the item display color into gray.
- Because there is not the item which is applicable to an OFFSET item as for X–SUS–B, X–SUS–G, Y-SUS-B, Y–SUS–G, V–SUS and V–OFFSET, selection is impossible. Always turn the OSD display color into gray, and display the adjustment value to "––––– (–––––)".

④ OFFSET — SLOT (At Connected SLOT ST1)

• This mode is effective for SLOT ST1 only in connection



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

●Basic Operation

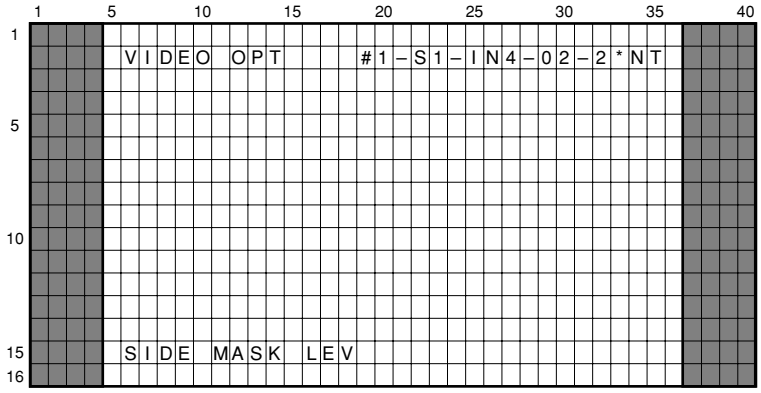
Perform the adjustment of each parameter.

Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	Y–DELAY	Call the adjustment value and display it.		×
AA02	2	Y–OUT LEVEL			×
AA03	3	CD TINT			×
AA04	4	CDR OFFSET			×
AA05	5	CDB OFFSET			×
AA06	6	R–Y LEVEL			×
AA07	7	B–Y LEVEL			×
AA08	8				
AA09	9				
AA00	10				
AA46	11				
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫	Adjustment value of the parameter selecting goes up.			
AA95	≪	Adjustment value of the parameter selecting goes down.			
AA8A	SET	Store the adjustment value and shift to upper layer.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	VIDEO OPTION		

●Operating specification

- Start from Y-DELAY (key 1) when shifted to this setting screen.
- When a key was pressed, follow the required operation after performing the last memory of current adjustment value.
- When there is not the item which is applicable to an input signal mode, display the adjustment value to "––––– (–––––)", and turn the item display color into gray.

6. VIDEO OPTION



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

● Basic Operation

Perform the adjustment of each parameter.

Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	SIDE MASK LEV	Select the adjustment item	Shift to adjustment screen of SIDE MASK LEVEL at SET (AA8A).	○
AA02	2	C MODE2		Shift to adjustment screen of COLOR MODE2 at SET (AA8A).	○
AA03	3	C TEMP LOW		Shift to adjustment screen of COLOR TEMP LOW at SET (AA8A).	○
AA04	4	C TEMP MID LOW		Shift to adjustment screen of COLOR TEMP MID LOW at SET (AA8A).	○
AA05	5	C TEMP MID HIGH		Shift to adjustment screen of COLOR TEMP MID HIGH at SET (AA8A).	○
AA06	6	C TEMP HIGH		Shift to adjustment screen of COLOR TEMP HIGH at +SET (AA8A).	○
AA07	7				
AA08	8				
AA09	9				
AA00	10				
AA46	11				
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫				
AA95	≪				
AA8A	SET	Select the item and shift to adjustment screen.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	INITIALIZE		

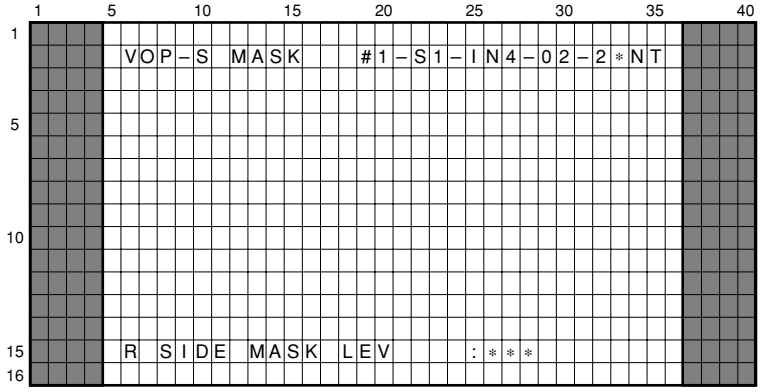
● Operating specification

- Start from SIDE MASK LEVEL (Key 1) when shifted to this setting screen.
  However, the movement original item to be selected when shifted from the lower layer.
- When each key was pressed, follow the required operation.

- When entered the service factory mode, COLOR MODE works by integrator setting.
  However in the COLOR MODE2 adjustment, Work with COLOR MODE2 without relation in COLOR MODE setting of the integrator menu.

- COLOR TEMP Setting in the COLOR TEMP Adjustment
  When entered the service factory mode without a relation in user setting, COLOR TEMP becomes "MIDDLE".
  In the COLOR TEMP adjustment, switch the operation to setting of selected COLOR TEMP.

① SIDE MASK LEV. Adjustment



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

•Basic Operation

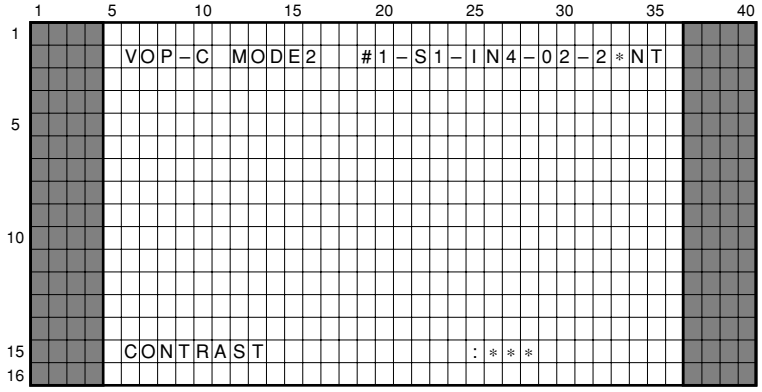
Perform the adjustment of each parameter.

Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	R SIDE MASK LEV	Call the adjustment value and display it.		×
AA02	2	G SIDE MASK LEV			×
AA03	3	B SIDE MASK LEV			×
AA04	4				
AA05	5				
AA06	6				
AA07	7				
AA08	8				
AA09	9				
AA00	10				
AA46	11				
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫	Adjustment value of the parameter selecting goes up.			
AA95	≪	Adjustment value of the parameter selecting goes down.			
AA8A	SET	Store the adjustment value and shift to upper layer.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	INITIALIZE		

•Operating specification

- Start from R SIDE MASK LEVEL (key 1) when shifted to this setting screen.
- When a key was pressed, follow the required operation after performing the last memory of current adjustment value.

② COLOR MODE2 Adjustment



COLOR MODE indication of second row/35th columns displays the default.
(It is not controlled with the COLOR MODE in adjustment.)

Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

●Basic Operation

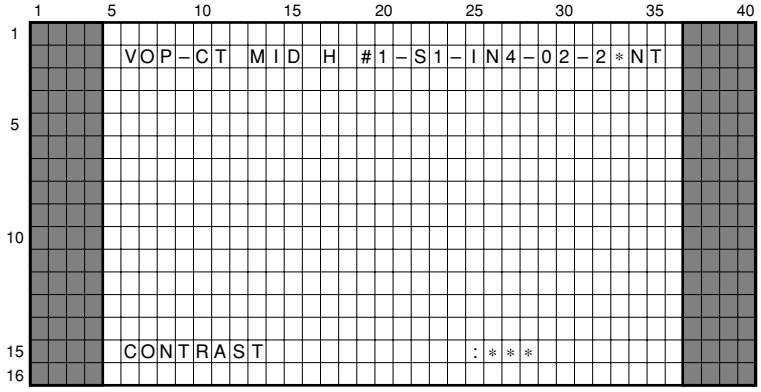
Perform the adjustment of each parameter.

Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	CONTRAST	Call the adjustment value and display it.		×
AA02	2	BRIGHT			×
AA03	3	COLOR			×
AA04	4	TINT			×
AA05	5	R HIGH			×
AA06	6	G HIGH			×
AA07	7	B HIGH			×
AA08	8	R LOW			×
AA09	9	G LOW			
AA00	10	B LOW			
AA46	11				
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫	Adjustment value of the parameter selecting goes up.			
AA95	≪	Adjustment value of the parameter selecting goes down.			
AA8A	SET	Store the adjustment value and shift to upper layer.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	INITIALIZE		

●Operating specification

- Start from CONTRAST (key 1) when shifted to this setting screen.
- When a key was pressed, follow the required operation after performing the last memory of current adjustment value.
- It becomes COLOR MODE2 during COLOR MODE adjustment. However, do not perform the last memory of setting. (Perform last memory of the adjustment value.)

③ COLOR TEMP Adjustment



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

•Basic Operation

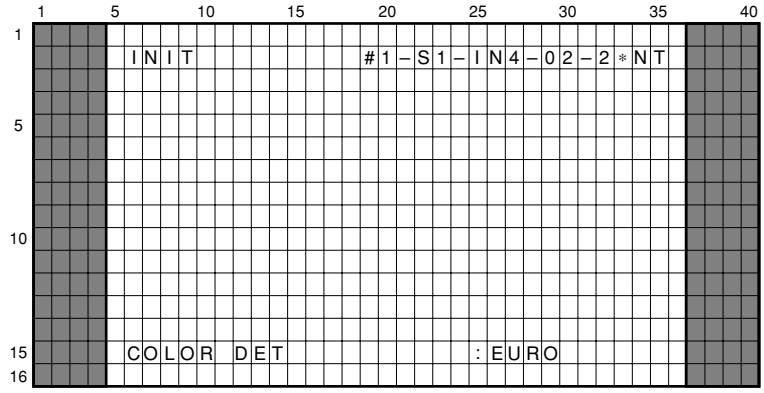
Perform the adjustment of each parameter.

Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	CONTRAST	Call the adjustment value and display it.		×
AA02	2	BRIGHT			×
AA03	3	COLOR			×
AA04	4	TINT			×
AA05	5	R HIGH			×
AA06	6	G HIGH			×
AA07	7	B HIGH			×
AA08	8	R LOW			×
AA09	9	G LOW			×
AA00	10	B LOW			×
AA46	11				
AA47	12				
AA4D	BS1				
AA4E	BS3				
AA4F	BS5				
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫	Adjustment value of the parameter selecting goes up.			
AA95	≪	Adjustment value of the parameter selecting goes down.			
AA8A	SET	Store the adjustment value and shift to upper layer.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	INITIALIZE		

•Operating specification

- Start from CONTRAST (key 1) when shifted to this setting screen.
- When a key was pressed, follow the required operation after performing the last memory of current adjustment value.
- Works by the selected COLOR TEMP setting during COLOR TEMP adjustment. However, do not perform the last memory of setting and maintain the "M IDDLE". (Perform last memory of the adjustment value.)

7. INITIALIZE



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

●Basic Operation

• Perform the modification and confirmation of various setting.

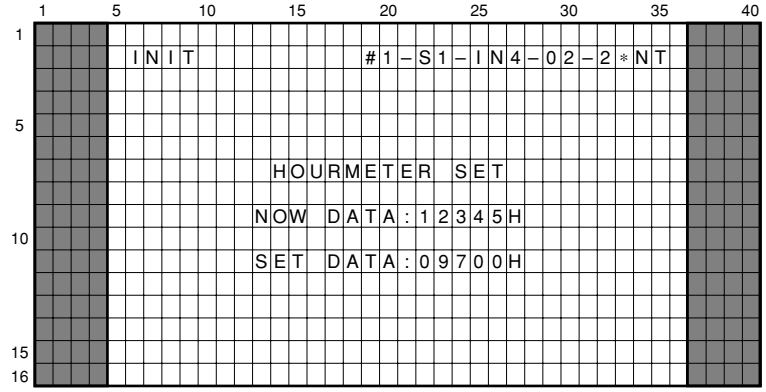
Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	COLOR DET	...→EURO→SA→ALL→...		×
AA02	2	EEP CHECK	EEPROM writing check		×
AA03	3	ACL SW	ON ↔ OFF		×
AA04	4	INTEGRATOR MODE	...→LOCK→UNLOCK→...		×
AA05	5	P&P WRITE ENA	For Plug & Play EEPROM writing		×
AA06	6	HOURMETER SET	Set the current hourmeter	Shift to setting screen at SET (AA8A)	○
AA07	7	PULSEMETER SET	Set the pulse hourmeter	Shift to setting screen at SET (AA8A)	○
AA08	8	FINAL SET UP		Execute at SET (AA8A)	×
AA09	9	VIDEO STANDARD	...→0→1→2→3→4→5→6→7→8→9→A...		×
AA00	10	PC STANDARD	...→0→1→2→3→4→5→6→7→8→9→A...		×
AA46	11	VIDEO MODE1	...→0→1→2→3→4→5→6→7→8→9→A...		×
AA47	12	PC MODE1	...→0→1→2→3→4→5→6→7→8→9→A...		×
AA4D	BS1	EEP DATA READ		Shift to setting screen at SET (AA8A)	○
AA4E	BS3	MASK1		Shift to setting screen at SET (AA8A)	○
AA4F	BS5	MASK2		Shift to setting screen at SET (AA8A)	○
AA50	BS7	MEMO		Shift to writing screen at SET (AA8A)	○
AA51	BS9	SERVICE PARTS		Execute at SET (AA8A)	×
AA52	BS11	PICTURE DEFAULT		Execute at SET (AA8A)	×
AA53	BS13				
AA54	BS15				
AA96	▲	Select upper item			
AA97	▼	Select lower item			
AA94	≫	Select the function			
AA95	≪	Select the function			
AA8A	SET	Select the item and shift to lower layer, or store the adjustment value and shift to upper layer.			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	INFORMATION		

●Operating specification

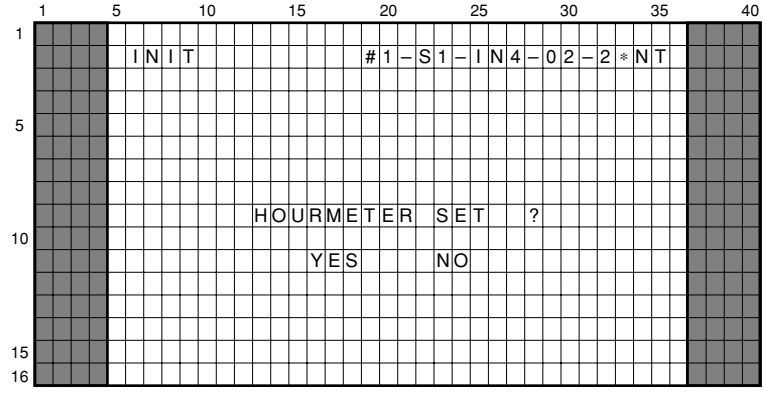
- Start from COLOR DET (Key 1) when shifted to this setting screen.
  However, the movement original item to be selected when shifted from the lower layer.
- When each key was pressed, follow the required operation.
- Perform the last memory of COLOR DET., ACL SW, INTE. MODE, MEMO, VIDEO STANDARD, PC STANDARD, VIDEO MODE1, PC MODE1, HOURMETER SET, PULSEMETER SET, FINAL SET UP, MASK1, MASK2 and PICTURE DEFAULT.

●Function description

1. COLOR DET. : Set the color detection system.
   → EURO → SA → ALL →
2. EEP CHECK: Check the EEPROM writing
   Display lower two places with the hexadecimal number of the result that added data to subaddress 1760-177C (PDC XGA/SHARP data) of EEPROM.
3. ACL SW: Set the ACL.
4. INTEGRATOR MODE: Set the integrator protection.
5. P&P WRITE ENA: Set the writing permission of the EEPROM for Plug & Play.
6. HOURMETER SET: Display and set the hourmeter.

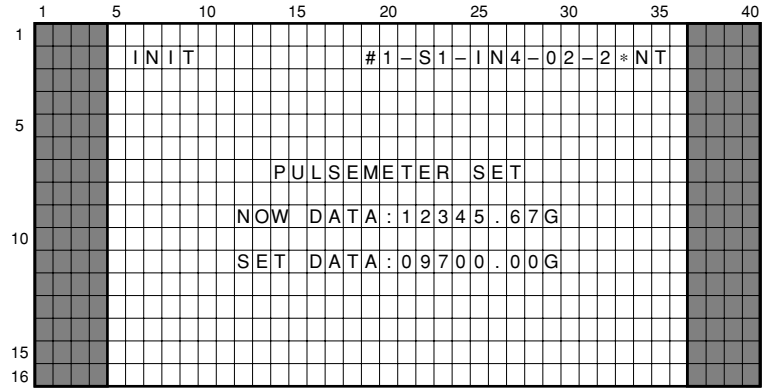


Can change three places of upper rank of SETDATA.
▲▼ : Select numeric value.
≪≫ : Can select three places of upper rank.
SET : Shift to the setting modification and confirmation screen.

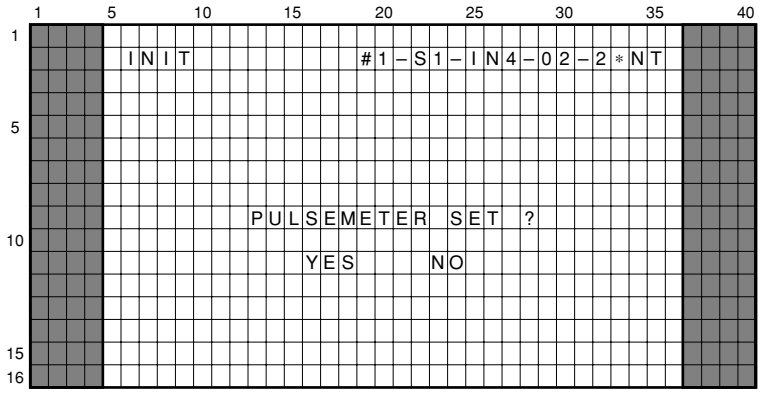


≪≫ : YES/NO selection
SET : Store the SET DATA at YES selection and shift to INIT screen.
Hold the NOW DATA at NO selection and shift to INIT screen.

7. PULSEMETER SET: Display and set the pulse meter.



Can change three places of upper rank of SETDATA.
▲▼ : Select numeric value.
≪≫ : Can select three places of upper rank.
SET : Shift to the setting modification and confirmation screen.

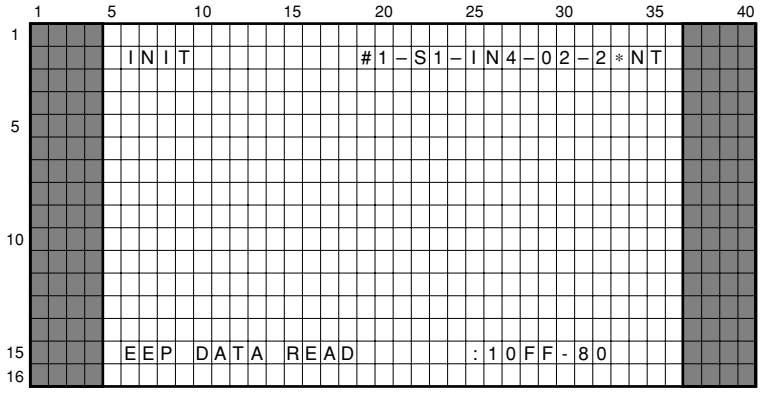


≪≫ : YES/NO selection
SET : Store the SET DATA at YES selection and shift to INIT screen.
Hold the NOW DATA at NO selection and shift to INIT screen.

8. FINAL SET UP: Setting to the factory shipping state.
   (Refer to the Final Setup Details.)
9. VIDEO STANDARD: Set the peak occurrences of STANDARD (USER MENU / POWER CONTROL) in the video system signal.
   (Set the following table 1.) Note: Please do not perform the change of setting in the service.
10. PC STANDARD: Set the peak occurrences of STANDARD (USER MENU / POWER CONTROL) in the PC system signal.
    (Set the following table 2.) Note: Please do not perform the change of setting in the service.
11. VIDEO MODE1: Set the peak occurrences of MODE1 (USER MENU / POWER CONTROL) in the video system signal.
    (Set the following table 3.) Note: Please do not perform the change of setting in the service.
12. PC MODE1: Set the peak occurrences of MODE1 (USER MENU / POWER CONTROL) in the PC system signal.
    (Set the following table 4.) Note: Please do not perform the change of setting in the service.

		Current Input Signal	
		VIDEO	**PC**
POWER CONTROL setting	**STANDARD mode**	Table1	Table2
	MODE1	Table3	Table4
	MODE2	PL6 (fixed)	

13. EEP DATA READ: Display the each address data of EEPROM.



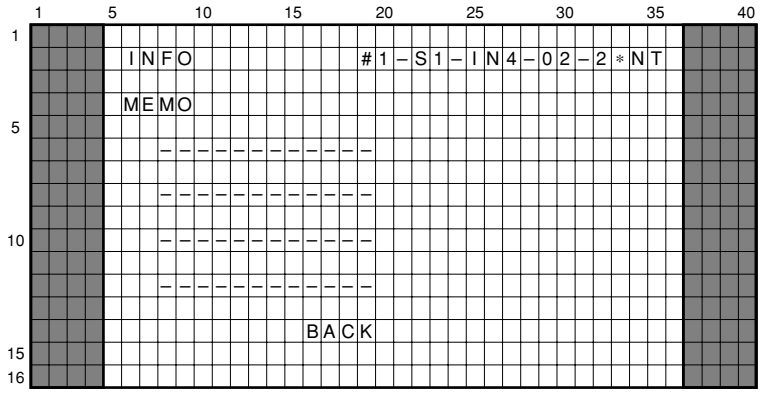
≪≫ : Select the address (four places) place.
▲▼ : Select numeric value.
SET : Shift to upper layer.
Update display data (hex) every address modification.

Display color : White (Selected address is yellow)
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

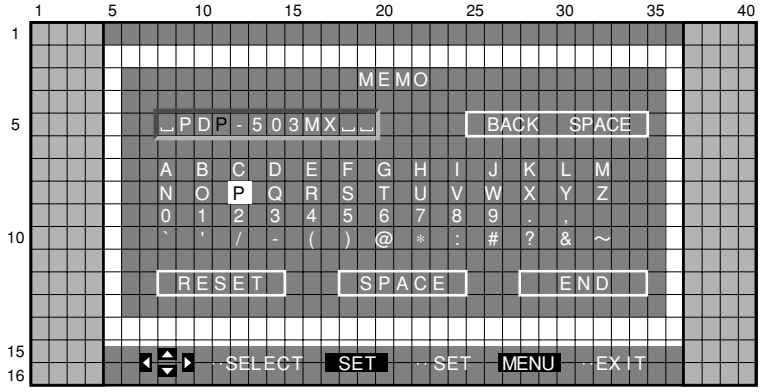
14. MASK1: Select the full mask. (Refer to "① MASK1" .)
    Note: Mask 1/2 are commonness and perform one item last memory.
15. MASK2: Select the mask pattern. (Refer to "② MASK2" .)
    Note: Mask 1/2 are commonness and perform one item last memory.

Caution: (item 14, 15 commonness)
- When key operation is done and performs OSD display, turns OFF FULL MASK for two seconds and display OSD. (common to in all modes)
- In FULL MASK selection (in MASK selection menu), Select the mask and turn off OSD two seconds later of no operation, and MASK screen displays.
- Perform MASK determination (press "SET"), and FULL MASK screen display starts.
- Release of the mask is possible only with "M00" with the RS-232C factory adjustment mode or "MASK OFF" of the service factory menu. (Release is impossible with "FULL MASK OFF" of the integrator menu and "FMN" of the RS-232C command.)

16. MEMO: Display and edit the memo data.



<MEMO/SELECT>
- Select MEMO to edit with ▲▼ keys.
- Shift to the <MEMO/EDIT> screen with the SET key.
- When selects BACK and presses the SET key, shift to the upper layer.



<MEMO/EDIT>
- Editing technique refers to the step of INPUT label of the user menu.
- Default is "−−−−−−−−−−−−" display.
(□ shows space.)
- When "RESET" was pressed, display returns to the default display setting.

17. SERVICE PARTS : Rewrite a PD number of the module microcomputer to the parts recognition number for service.
Refer to "7.1.3 AUTOMATIC BACKUP OF DIGITAL VIDEO ASSY DATA".
For service recognition number: Modify the first column of the PD number to F
Caution: Only the EEPROM for the module microcomputer to modify the service recognition number.
A service identification number of module microcomputer data area in EEPROM for main microcomputer does not rewrite it.
Examples: F691 (an original PD number is 5691).

18. PICTURE DEFAULT
- The data which adjusted in the service factory mode reflect as default value of PICTURE, WHITE BAL and SIDE MASK LEVEL of the integrator menu.
- The value that adjusted in the service factory mode is not reflected to all video output data except the service factory mode so long as does not execute "PICTURE DEFAULT" or "FINAL SETUP".
- Execute "PICTURE DEFAULT" after the adjustment for the value that adjusted in the service factory mode is reflected to video output data.

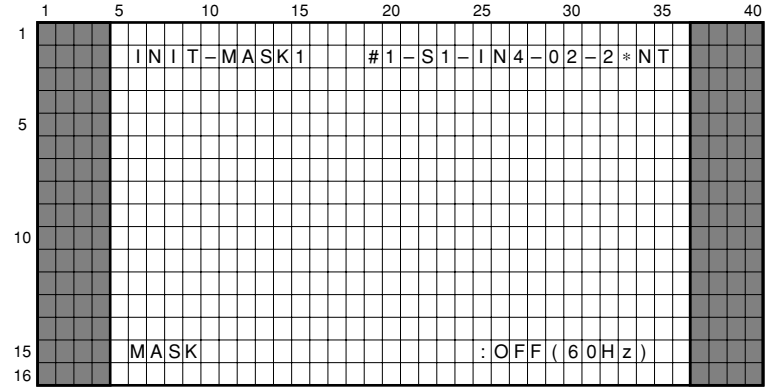
Note: When executed "PICTURE DEFAULT"
① All the PICTURE items of the user menu are reset.
② PICTURE, WHT BAL and SIDE MASK LEVEL of the integrator menu become default value all in base with the current factory adjustment value.

● **FINAL SETUP Details**

Items		Initial Setting	Remarks
Key Remote control input			
Power supply (STANDBY/ON)			NO CARE
Input function		INPUT1	
Screen size	VIDEO	WIDE	(In the video signal input) Every each input function
	PC	① DOT BY DOT	(In the PC signal input) Every each input function and signal mode Priority sequence is ① → ② → ③
		② 4 : 3 (incluted TYPE)	
		③ FULL (incluted TYPE)	
Vertical position adjustment (V scroll)		0	Every each input function (at VIDEO)
KEY LOCK		UNLOCK	All input functions are common
VOLUME		0	
User menu setting item			
PICTURE		Default value of all adjustment	Every each input function and signal mode
SCREEN		Default value of all adjustment	Every each input function and signal mode (at PC)
INPUT LABEL		□INPUT∗□	(∗: 1 to 5). Every each input function
AUTO POWER OFF		OFF	Every each input function
POWER MANAGEMENT		OFF	INPUT1 (at PC) /5
COLOR TEMP		MIDDLE	Every each input function (at VIDEO)
DIGITAL NR		LOW	
HIGH CONTRAST		OFF	
PURECINEMA		OFF	Every each input function (at 525i (NTSC))
COLOR SYSTEM		AUTO	Every each INPUT3/4
CLAMP POSITION		AUTO	Every each INPUT1/2
3D Y/C MODE		MOTION	INPUT 4
SETTING		VGA (at mode03, 31, E1)	Every INPUT 1/2
		XGA (at mode61, 71, 63, 73)	
VIDEO SIGNAL		RGB	
POWER CONTROL		STANDARD	(VIDEO/PC) All input functions are common
AUTO FUNCTION		OFF	All input functions are common
AUDIO OUT		FIXED	
Integrator menu setting item			
PICTURE		Default value of all adjustment items	Every each input function and signal mode
WHITE BALANCE		Default value of all adjustment items	
SCREEN		Default value of all adjustment items	
2×2 MODE		OFF/Upper left	Every each input function
BRT. ENHANCE	VIDEO	OFF	
	PC	OFF	Every each function that the PC input is possible
HDTV MODE		1035i	All input functions are common
VIDEO INPUT		COMPONENT1	750p/1125i/1125p
		COMPONENT2	525i/525p/625i/625p
SUB VOLUME		60	Every input function
OSD		ON	Set is common
BAUD RATE		4800BPS	
TIMER		OFF/1/0.0/WHT	(Setting/Timer time/Mask time/mask color) All input functions are common

Items		Initial Setting	Remarks
FULL MASK		OFF	Set is common
SIDE MASK	R LEVEL	Default value	
	G LEVEL	Default value	
	B LEVEL	Default value	
MASK CONTROL		ON	
ORBITER MODE		OFF	
INVERSE MODE		OFF	
COLOR MODE		MODE1	Set is common
MIRROR MODE		OFF	Set is common
FAN CONTROL		AUTO	
MONITOR NAME		□□□PLASMA□□□	
ID NO SET		– –	
SLOT INPUT		VIDEO (RGB)	
Factory Setting Item			
INTE MODE		UNLOCK	Set is common
MASK1/2 setting		OFF	
ACL SW		ON	
COLOR DET			NO CARE
RS-232C Setting Item			
VIDEO MUTE		OFF	Set is common
LED		ON	
100% display		OFF	

① MASK1



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

•Basic Operation

Perform the adjustment of each parameter.

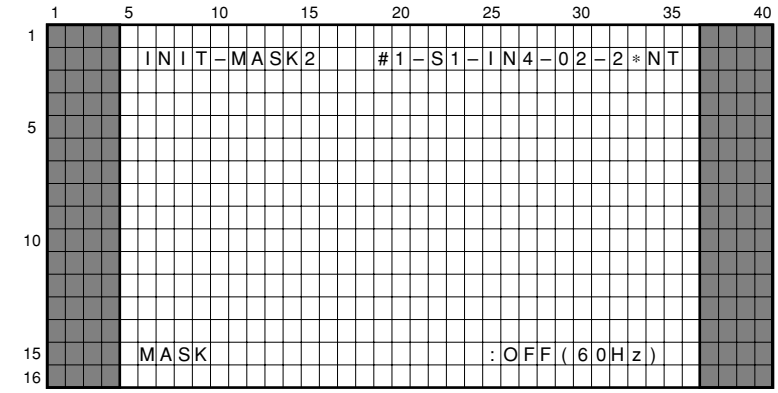
Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	MASK OFF		OFF	×
AA02	2	MASK51		White	×
AA03	3	MASK52		Cyan 274	×
AA04	4	MASK53		Mazenta 1023	×
AA05	5	MASK54		Flesh color	×
AA06	6	MASK55		Cyan 1023	×
AA07	7	MASK56		Light purple	×
AA08	8	MASK57		Sky blue	×
AA09	9	MASK58		Red	×
AA00	10	MASK59		Green	×
AA46	11	MASK60		Blue	×
AA47	12	MASK61		Black	×
AA4D	BS1	MASK62		Red 779	×
AA4E	BS3	MASK63		Reservation	×
AA4F	BS5	MASK64		Reservation	×
AA50	BS7	MASK65		Reservation	×
AA51	BS9	MASK66		Reservation	×
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select the upper item			
AA97	▼	Select the lower item			
AA94	≫	Select free-running frequency	••→50Hz→60Hz→70Hz→••	Default is 60 Hz	
AA95	≪	Select free-running frequency	••→50Hz→60Hz→70Hz→••	Default is 60 Hz	
AA8A	SET	Store the selected item and shift to upper layer			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	INFORMATION		

•Operating specification

- Start from MASK OFF (Key1) when shifted to this setting screen. However, set MASK position is a default when sets an either mask already.
- When entered this mode by the state that either MASK set of MASK2, setting of MASK2 is off, and MASK 1 starts from MASK OFF (Key1).
- When a key was pressed, follow the required operation after performed the last memory of the current adjustment value.

Caution: In the MASK setting, do not display the OSD.
When other operations were selected, perform OSD display after MASK OFF for two seconds.
Then return to selected FULL MASK display.

② MASK2



Display color : White
Half tone : Blue (second row / 15th row for each 5 to 36th columns)

●Basic Operation

Perform the adjustment of each parameter.

Rem Code	Key Name	Function & Display	Description	Remarks	Lower Layer
AA01	1	MASK OFF		OFF	×
AA02	2	MASK 01		Pattern 1 (Ramp)	×
AA03	3	MASK 02		Pattern 2 (Color-bar)	×
AA04	4	MASK 03		Pattern 3 (Slanting line)	×
AA05	5	MASK 04		Pattern 4 (For W/B Lo-Light adjustment 1/5Window (14%, 56%))	×
AA06	6	MASK 05		Pattern 5 (For W/B Lo-Light adjustment 1/5Window (Pred, Skin))	×
AA07	7	MASK 06		Pattern 6 (For W/B Peak adjustment 1/5Window (100%))	×
AA08	8	MASK 07		Pattern 7 (Peak signal : For peak measurement and adjustment 1/5Window (100%))	×
AA09	9	MASK 08		Pattern 8 (Reservation)	×
AA00	10	MASK 09		Pattern 9 (For scan IC protection test Window-A)	×
AA46	11	MASK 10		Pattern 10 (For scan IC protection test Window-B)	×
AA47	12	MASK 11		Pattern 11 (Reservation)	×
AA4D	BS1	MASK 12		Pattern 12 (Reservation)	×
AA4E	BS3	MASK 13		Pattern 13 (Reservation)	×
AA4F	BS5	MASK 14		Pattern 14 (Reservation)	×
AA50	BS7				
AA51	BS9				
AA52	BS11				
AA53	BS13				
AA54	BS15				
AA96	▲	Select the upper item			
AA97	▼	Select the lower item			
AA94	≫	Select free-running frequency	••→50Hz→60Hz→70Hz→••	Default is 60 Hz	
AA95	≪	Select free-running frequency	••→50Hz→60Hz→70Hz→••	Default is 60 Hz	
AA8A	SET	Store the selected item and shift to upper layer			
AAD3-AF70 AA4A	AUDIO DISPLAY CALL	Shift to various adjustment / setting screen.	INFORMATION		
AA1D	SURROUND MODE		RANGE CHECK		
AA59 AA43	AV SELECT AV MEMORY		REFERENCE		
AA1E	MPX		OFFSET		
AAD3-AF3C	SCREEN SIZE		VIDEO OPTION		
AAD3-AF36 AAD3-AF22	FULL AUTO ZOOM P.ZOOM		INITIALIZE		
AA49	MUTING	Shift to next adjustment / setting screen.	INFORMATION		

●Operating specification

- Start from MASK OFF (Key1) when shifted to this setting screen. However, set MASK position is a default when sets an either mask already.
- When entered this mode by the state that either MASK set of MASK1, setting of MASK1 is off, and MASK 1 starts from MASK OFF (Key1).
- When a key was pressed, follow the required operation after performed the last memory of the current adjustment value.

Caution: In the MASK setting, do not display the OSD.
When other operations were selected, perform OSD display after MASK OFF for two seconds.
Then return to selected MASK display.

● Cassification 1 of Input Signal Mode (VIDEO)

SIG Mode	Signal Type	OSD display	V. Frequency fv (Hz)	H. Frequency fh (Hz)	Display Pixel Number	INPUT5 (DVI input) Correspondence
00 • 5 00 • 6 00 • 7 00 • 8 00 • 9	SDTV • 625i (PAL/SECAM)	(100% tentative) 4 : 3 FULL ZOOM WIDE	50	15.6	1280 × 768 984 × 768 1280 × 768 1280 × 768 1280 × 768	× (no-correspondence)
01 • 5 01 • 6 01 • 7 01 • 8 01 • 9	SDTV • 625p (PAL • Progressive)	(100% tentative) 4 : 3 FULL ZOOM WIDE	50	31.2	1280 × 768 984 × 768 1280 × 768 1280 × 768 1280 × 768	× (no-correspondence)
02 • 5 02 • 6 02 • 7 02 • 8 02 • 9	SDTV • 525i (NTSC/4.43NTSC)	(100% tentative) 4 : 3 FULL ZOOM WIDE	60	15.7	1280 × 768 984 × 768 1280 × 768 1280 × 768 1280 × 768	× (no-correspondence)
03 • 5 03 • 6 03 • 7 03 • 8 03 • 9	SDTV • 525p (NTSC • Progressive)	(100% tentative) 4 : 3 FULL ZOOM WIDE	60	31.5	1280 × 768 984 × 768 1280 × 768 1280 × 768 1280 × 768	× (no-correspondence)
11 • 5 11 • 7	HDTV • 1125i (1080 number of effective scanning lines)	(100%) FULL	50	28.1	1280 × 768 1280 × 768	× (no-correspondence)
12 • 5 12 • 7	HDTV • 1125i (1080 number of effective scanning lines)	(100%) FULL	60	33.8	1280 × 768 1280 × 768	× (no-correspondence)
13 • 5 13 • 7	HDTV • 1125i (1035 number of effective scanning lines)	(100%) FULL	60	33.8	1280 × 768 1280 × 768	× (no-correspondence)
14 • 5 14 • 7	HDTV • 750p (720 number of effective scanning lines)	(100%) FULL	60	45.0	1280 × 768 1280 × 768	× (no-correspondence)
15 • 5 15 • 7	HDTV • 1125p (1080 number of effective scanning lines)	(100%) FULL	60	67.5	1280 × 768 1280 × 768	× (no-correspondence)

● Classification 2 of Input Signal Mode (PC)

SIG Mode	Signal Type	OSD Display	V. Frequency v (Hz)	H. Frequency h (Hz)	Display Pixel Number	INPUT5 (DVI input) Correspondence
20 • 2	640 × 400	FULL	56	24.8	1280 × 768	× (non-correspondence)
23 • 2	640 × 400	FULL	70	31.5	1280 × 768	△ (correspond informally)
31 • 0 31 • 1 31 • 2	640 × 480	DOT BY DOT 4 : 3 FULL	60	31.5	640 × 480 1024 × 768 1280 × 768	○ (correspondence)
32 • 0 32 • 1 32 • 2	640 × 480	DOT BY DOT 4 : 3 FULL	66	35.0	640 × 480 1024 × 768 1280 × 768	△ (correspond informally)
34 • 0 34 • 1 34 • 2	640 × 480	DOT BY DOT 4 : 3 FULL	72	37.9	640 × 480 1024 × 768 1280 × 768	△ (correspond informally)
35 • 0 35 • 1 35 • 2	640 × 480	DOT BY DOT 4 : 3 FULL	75	37.5	640 × 480 1024 × 768 1280 × 768	△ (correspond informally)
36 • 0 36 • 1 36 • 2	640 × 480	DOT BY DOT 4 : 3 FULL	85	43.3	640 × 480 1024 × 768 1280 × 768	△ (correspond informally)
40 • 4 40 • 1 40 • 2	800 × 600	DOT BY DOT 4 : 3 FULL	56	35.1	800 × 600 1024 × 768 1280 × 768	○ (correspondence)
41 • 0 41 • 1 41 • 2	800 × 600	DOT BY DOT 4 : 3 FULL	60	37.9	800 × 600 1024 × 768 1280 × 768	○ (correspondence)
44 • 0 44 • 1 44 • 2	800 × 600	DOT BY DOT 4 : 3 FULL	72	48.1	800 × 600 1024 × 768 1280 × 768	△ (correspond informally)
45 • 0 45 • 1 45 • 2	800 × 600	DOT BY DOT 4 : 3 FULL	75	46.9	800 × 600 1024 × 768 1280 × 768	△ (correspond informally)
46 • 0 46 • 1 46 • 2	800 × 600	DOT BY DOT 4 : 3 FULL	85	53.7	800 × 600 1024 × 768 1280 × 768	△ (correspond informally)
55 • 0 55 • 1 55 • 2	832 × 624	DOT BY DOT 4 : 3 FULL	75	49.7	832 × 624 1024 × 768 1280 × 768	△ (correspond informally)
61 • 1 61 • 2	1024 × 768	DOT BY DOT FULL	60	48.4	1024 × 768 1280 × 768	○ (correspondence)
63 • 1 63 • 2	1024 × 768	DOT BY DOT FULL	70	56.5	1024 × 768 1280 × 768	△ (correspond informally)
65 • 1 65 • 2	1024 × 768	DOT BY DOT FULL	75	60.0	1024 × 768 1280 × 768	△ (correspond informally)
66 • 1 66 • 2	1024 × 768	DOT BY DOT FULL	85	68.7	1024 × 768 1280 × 768	△ (correspond informally)
70 • 2	1280 × 768	DOT BY DOT	56	45.1	1024 × 768	○ (correspondence)
71 • 2	1280 × 768	DOT BY DOT	60	48.1	1024 × 768	○ (correspondence)
73 • 2	1280 × 768	DOT BY DOT	70	55.5	1024 × 768	△ (correspond informally)

SIG Mode	Signal Type	OSD Display	V. Frequency v (Hz)	H. Frequency h (Hz)	Display Pixel Number	INPUT5 (DVI input) Correspondence
81 • 1 81 • 2	1152 × 864	4 : 3 (TYPE) FULL (TYPE)	60	53.7	1024 × 768 1280 × 768	❍ (correspondence)
84 • 1 84 • 2	1152 × 864	4 : 3 (TYPE) FULL (TYPE)	72	64.9	1024 × 768 1280 × 768	△ (correspond informally)
85 • 1 85 • 2	1152 × 864	4 : 3 (TYPE) FULL (TYPE)	75	67.5	1024 × 768 1280 × 768	△ (correspond informally)
95 • 1 95 • 2	1152 × 870	4 : 3 (TYPE) FULL (TYPE)	75	68.7	1016 × 768 1280 × 768	△ (correspond informally)
A2 • 1 A2 • 2	1152 × 900	4 : 3 (TYPE) FULL (TYPE)	66	62.0	984 × 768 1280 × 768	△ (correspond informally)
A5 • 1 A5 • 2	1152 × 900	4 : 3 (TYPE) FULL (TYPE)	76	71.7	984 × 768 1280 × 768	△ (correspond informally)
B1 • 1 B1 • 2	1280 × 960	4 : 3 (TYPE) FULL (TYPE)	60	60.0	1024 × 768 1280 × 768	❍ (correspondence)
C1 • 1 C1 • 2 C1 • 3	1280 × 1024	4 : 3 (TYPE) FULL (TYPE) PARTIAL	60	64.0	960 × 768 1280 × 768 1280 × 768	❍ (correspondence)
C5 • 1 C5 • 2	1280 × 1024	4 : 3 (TYPE) FULL (TYPE)	75	80.0	960 × 768 1280 × 768	× (non-correspondence)
C6 • 1 C6 • 2	1280 × 1024	4 : 3 (TYPE) FULL (TYPE)	85	91.1	960 × 768 1280 × 768	× (non-correspondence)
D1 • 1 D1 • 2	1600 × 1200	4 : 3 (TYPE) FULL (TYPE)	60	75.0	1024 × 768 1280 × 768	× (non-correspondence)
D2 • 1 D2 • 2	1600 × 1200	4 : 3 (TYPE) FULL (TYPE)	65	81.3	1024 × 768 1280 × 768	× (non-correspondence)
D3 • 1 D3 • 2	1600 × 1200	4 : 3 (TYPE) FULL (TYPE)	70	87.5	1024 × 768 1280 × 768	× (non-correspondence)
D5 • 1 D5 • 2	1600 × 1200	4 : 3 (TYPE) FULL (TYPE)	75	93.8	1024 × 768 1280 × 768	× (non-correspondence)
D6 • 1 D6 • 2	1600 × 1200	4 : 3 (TYPE) FULL (TYPE)	85	106.3	1024 × 768 1280 × 768	× (non-correspondence)
E1 • 1 E1 • 2	852 × 480	DOT BY DOT FULL	60	31.7	852 × 480 1280 × 768	❍ (correspondence)

6.2 ADJUSTMENT REQUIRED WHEN THE SET IS REPAIRED OR REPLACED

■ RGB Assy

• When repaired

1. Adjustment is impossible when replaced the Matrix IC or AD/PLL/AMP IC.
2. Adjustment is unnecessary in case of others.

• When replaced

White balance adjustment

■ SW POWER SUPPLY Module

• When replaced

No adjustment required.

■ DIGITAL VIDEO Assy

• When repaired

No adjustment required.

• When replaced

1. Adjustment is unnecessary when replaced only the DIGITAL VIDEO Assy.
2. When replaced it with RGB Assy simultaneously, remove IC1204 (24LC04(1) SN-TBB) from the former PC Board to replace, and install it to the new PC Board.
3. When use new Assy which replaces it and recovered as service parts once again, replace IC1204 with new IC.

■ SERVICE PANEL Assy

• When you replace service panel Assy

Adjustment 1: SUB-B Ground Timing Adjustment
Adjustment 2: VSUS Adjustment
All of service panels have a panel identification label (Vsus data, Vofs data). Please just input this V-SUS data on the label to "V-SUS" on REF-DIG of service factory mode by remote control.
(Please refer to the page 78 of S/M)
Adjustment 3: VOFS Adjustment
Please just input the V-OFS data on the label to "V-OFFSET" on REF-DIG of service factory mode.
(Please refer to the page 78 of S/M)
Adjustment 4: Panel White Balance Adjustment

■ Y DRIVE Assy

• When repaired

1. VOFS/VH/IC5V voltage adjustment
2. Timing adjustment of pulse module

• When replaced

1. Panel white balance adjustment

■ X DRIVE Assy

• When repaired

1. VRN voltage adjustment
2. Timing adjustment of pulse module

• When replaced

1. Panel white balance adjustment

■ Video Card (CMPAV05)

• When repaired

1. Y LEVEL adjustment
2. Color difference and TINT adjustment

• When replaced

No adjustment required.

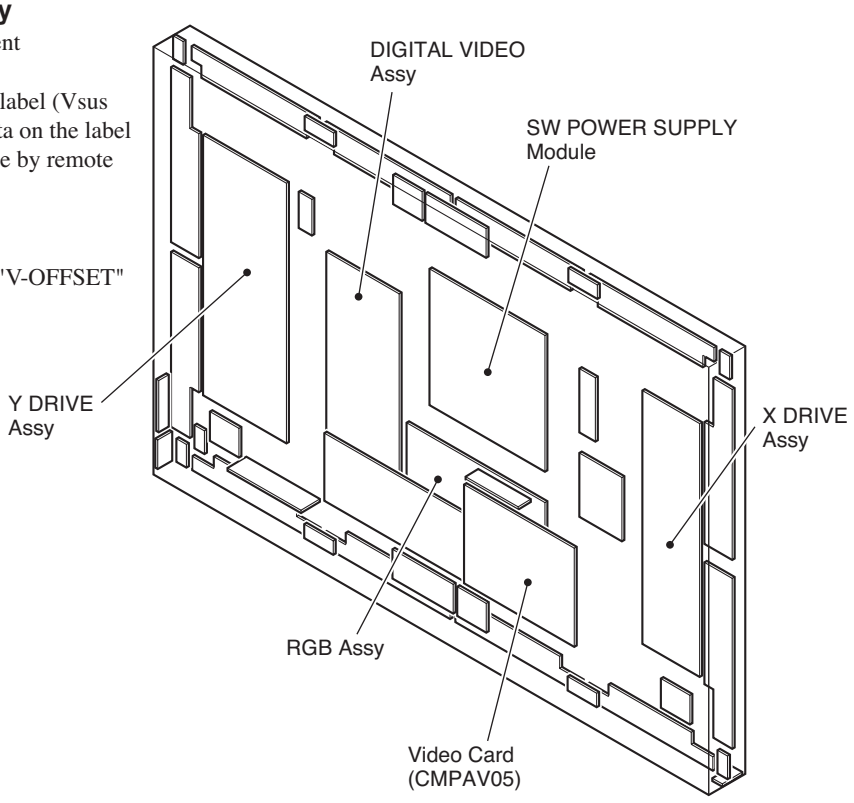


Fig. 1 PC Board Location (rear side view)

6.3 ADJUSTMENT

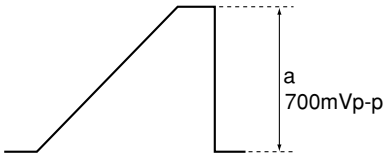
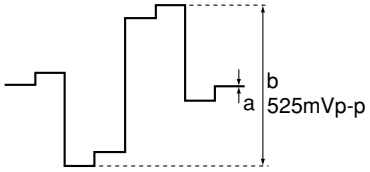
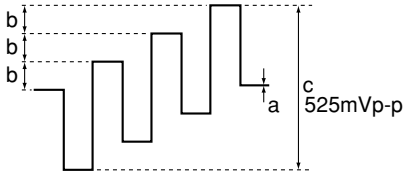
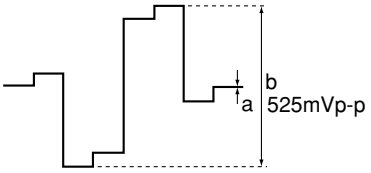
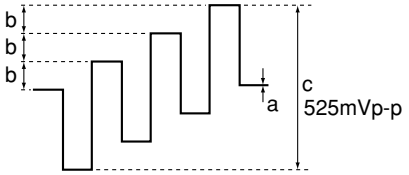
6.3.1 Video Card Adjustment

• Adjust after controlling each IC.

• Perform it from step 1 to step 6 every each input signal.

NTSC → PAL → SECAM → 443NTSC → PALM → PALN → NTSC → PAL

INPUT4 INPUT3

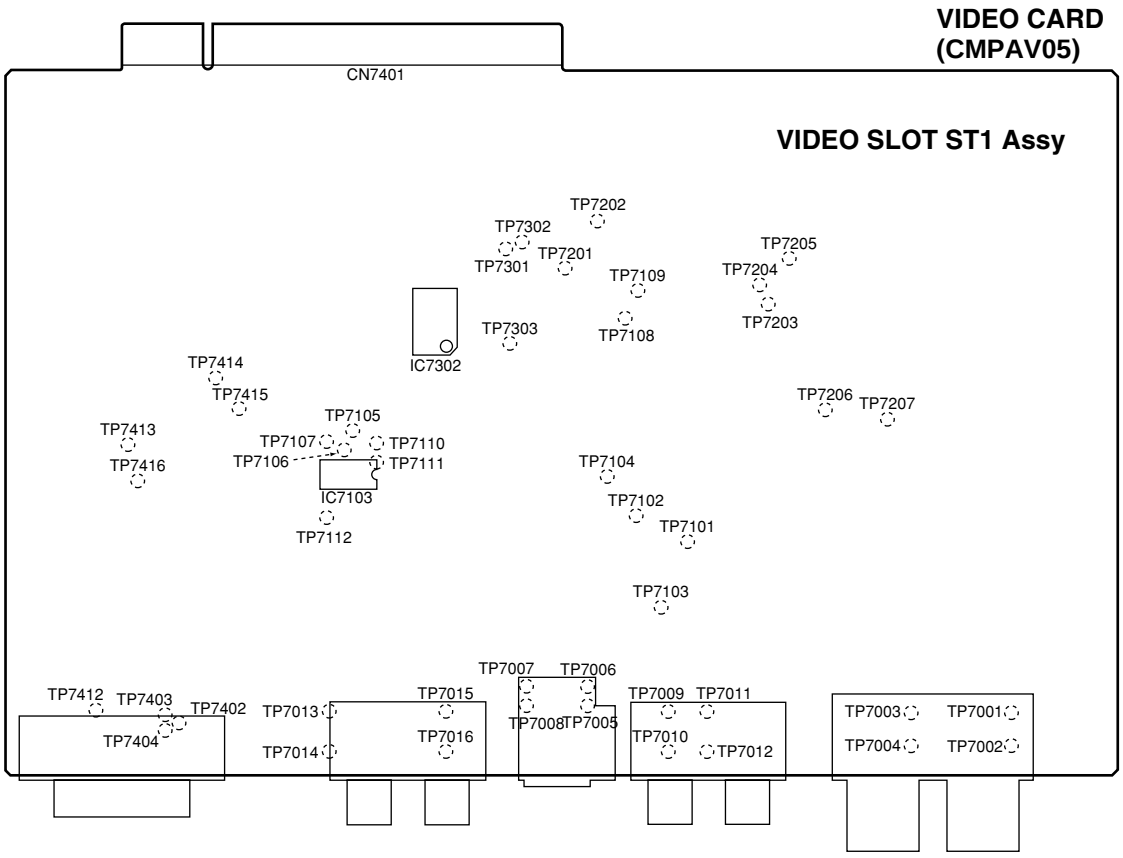
Step	Adjustment Item	Input Signal	Control	Measuring Point	Adjusting Value	Adjusting Method
1	Y Level Adjustment (IC7130)(SA83)	RAMP	IC7302	CN7401-pin 3	700mVp-p	Adjust Level so that the peak to peak of waveform becomes 700 mVp-p. 
2	R-Y Offset Adjustment (IC7130)(SA88)	Color-Bar	IC7302	CN7401-pin 7	525mVp-p	a: Adjust Offset so that the pedestal level becomes fixed. b: Adjust Level so that the peak to peak of waveform becomes 525 mVp-p. 
3	B-Y Offset Adjustment (IC7130)(SA88)	Color-Bar	IC7302	CN7401-pin 5	525mVp-p	a: Adjust Offset so that the pedestal level becomes fixed. b: Adjust TINT so that the height ratio of each stair step waveform becomes fixed. c: Adjust Level so that the peak to peak of waveform becomes 525 mVp-p. 
4	TINT Adjustment (IC7130)(SA80)					
5	R-Y Level Adjustment (IC7103) (SA101)	Color-Bar	IC7103	CN7401-pin 7	525mVp-p	a: Adjust Offset so that the pedestal level becomes fixed. b: Adjust Level so that the peak to peak of waveform becomes 525 mVp-p. 
6	B-Y Level Adjustment (IC7103) (SA100)	Color-Bar	IC7103	CN7401-pin 5	525mVp-p	a: Adjust Offset so that the pedestal level becomes fixed. b: Adjust TINT so that the height ratio of each stair step waveform becomes fixed. c: Adjust Level so that the peak to peak of waveform becomes 525 mVp-p. 

Each adjustment value which adjusted, store the adjustment data in IC7104.

● Operating Check

After each adjustment was completed, confirm the following signals are output rightly.

- INPUT3 input signal
- INPUT4 input signal
- INPUT5 input signal
- Signal distinction circuit operation
- Audio signal



Adjustment Points

6.3.2 Main Unit Adjustment

■ VOFS/VH/IC5V Voltage Adjustment

<table>
<tr><th>Input Signal</th><th>Adjusting Point</th><th>Adjusting Method</th></tr>
<tr><td rowspan="4">White 100%</td><td>VR2701 (VOFS)
(Y DRIVE Assy)</td><td>
VOFS (Offset voltage) adjustment
Method 1
1. Write down a adjustment value of V-OFFSET of REF-DIG mode in the factory mode.
2. Set this adjustment value to center (128).
3. Adjust VR2701 so that the voltage between K2701 (VOFS) and K2703 (SUS GND) becomes 45V.
4. Return it to the value that wrote down a adjustment value of V-OFFSET in step 1.

Method 2
1. Read the adjustment value of V-OFFSET of REF-DIG mode in the factory mode.
2. Adjust VR2701 so that the voltage between K2710 (VOFS) and K2703 (SUS GND) becomes following voltage ± 0.5V.

<table>
<tr><th>Input Command</th><th>DAC Output</th><th>Setting Voltage</th><th>Input Command</th><th>DAC Output</th><th>Setting Voltage</th></tr>
<tr><td>VOF000</td><td>0.4</td><td>25</td><td>VOF134</td><td>2.599212598</td><td>45.94488</td></tr>
<tr><td>VOF006</td><td>0.4984375</td><td>25.9375</td><td>VOF141</td><td>2.71496063</td><td>47.04724</td></tr>
<tr><td>VOF013</td><td>0.61328125</td><td>27.03125</td><td>VOF147</td><td>2.814173228</td><td>47.99213</td></tr>
<tr><td>VOF019</td><td>0.71171875</td><td>27.96875</td><td>VOF153</td><td>2.913385827</td><td>48.93701</td></tr>
<tr><td>VOF026</td><td>0.8265625</td><td>29.0625</td><td>VOF160</td><td>3.029133858</td><td>50.03937</td></tr>
<tr><td>VOF032</td><td>0.925</td><td>30</td><td>VOF166</td><td>3.128346457</td><td>50.98425</td></tr>
<tr><td>VOF038</td><td>1.0234375</td><td>30.9375</td><td>VOF172</td><td>3.227559055</td><td>51.92913</td></tr>
<tr><td>VOF045</td><td>1.13828125</td><td>32.03125</td><td>VOF179</td><td>3.343307087</td><td>53.0315</td></tr>
<tr><td>VOF051</td><td>1.23671875</td><td>32.96875</td><td>VOF185</td><td>3.442519685</td><td>53.97638</td></tr>
<tr><td>VOF058</td><td>1.3515625</td><td>34.0625</td><td>VOF191</td><td>3.541732283</td><td>54.92126</td></tr>
<tr><td>VOF064</td><td>1.45</td><td>35</td><td>VOF198</td><td>3.657480315</td><td>56.02362</td></tr>
<tr><td>VOF070</td><td>1.5484375</td><td>35.9375</td><td>VOF204</td><td>3.756692913</td><td>56.9685</td></tr>
<tr><td>VOF077</td><td>1.66328125</td><td>37.03125</td><td>VOF211</td><td>3.872440945</td><td>58.07087</td></tr>
<tr><td>VOF083</td><td>1.76171875</td><td>37.96875</td><td>VOF217</td><td>3.971653543</td><td>59.01575</td></tr>
<tr><td>VOF090</td><td>1.8765625</td><td>39.0625</td><td>VOF223</td><td>4.070866142</td><td>59.96063</td></tr>
<tr><td>VOF096</td><td>1.975</td><td>40</td><td>VOF230</td><td>4.186614173</td><td>61.06299</td></tr>
<tr><td>VOF102</td><td>2.0734375</td><td>40.9375</td><td>VOF236</td><td>4.285826772</td><td>62.00787</td></tr>
<tr><td>VOF109</td><td>2.18828125</td><td>42.03125</td><td>VOF242</td><td>4.38503937</td><td>62.95276</td></tr>
<tr><td>VOF115</td><td>2.28671875</td><td>42.96875</td><td>VOF249</td><td>4.500787402</td><td>64.05512</td></tr>
<tr><td>VOF122</td><td>2.4015625</td><td>44.0625</td><td>VOF255</td><td>4.6</td><td>65</td></tr>
<tr><td>VOF128</td><td>2.5</td><td>45</td><td></td><td></td><td></td></tr>
</table>
The symptom is case of mis-adjustment
If the VOFS Voltage adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, panel will light white.
</td></tr>
<tr><td>VR2703 (VH)
(Y DRIVE Assy)</td><td>
VH (voltage for scan IC) Adjustment
Adjust so that the voltage between K2716 (VH) and K2720 (PSUS) becomes 130V ± 0.5V. PSUS (=GNDH) is a floating GND and the electric potential is different from that of chassis GND. Be sure not to short-circuit PSUS (=GNDH) and another GND, because that may damage the unit.

The symptom is case of mis-adjustment
If the VH adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, panel will light white.
</td></tr>
<tr><td>VR2702 (IC5V)
(Y DRIVE Assy)</td><td>
IC5V Adjustment
Adjust so that the voltage between K2707 (IC5V) and K2720 (PSUS) becomes 5.0V ± 0.1V. PSUS (=GNDH) is a floating GND and the electric potential is different from that of chassis GND. Be sure not to short-circuit PSUS (=GNDH) and another GND, because that may damage the unit.
</td></tr>
<tr><td colspan="2">Note : Be sure to measure between specified test points.</td></tr>
</table>

■ Sustain Pulse Waveform Adjustment

Input Signal	Adjusting Point	Adjusting Method
White 100%	REF_DIG mode in Factory mode X-SUS-B : key 9 Y-SUS-B : key 11	**X-SUS-B, Y-SUS-B Adjustment** Set to the indicated value with a key on the remote control unit. (Refer to "Timing adjustment of control signal of X and Y Drive Assys".)

■ VRN Voltage Adjustment

Input Signal	Adjusting Point	Adjusting Method
White 100%	VR3701 (VRN) (X DRIVE Assy)	**VRN (minus reset voltage adjustment)** Adjust so that the voltage between K3707 (VRN) and K3702 (SUS-GND) becomes -300V ± 1.0V.

■ Panel White Balance Adjustment

Input Signal	Adjusting Point	Adjusting Method
		Adjust the parameter in the OFFSET-DIGITAL of factory mode as follows; PANEL R-HIGH 〜 PANEL B-LOW In this time, dispay uses the mask (MASK04) of factory mode. Reference : Adjustment values using the Media color-difference meter (A-100)

	MASK Left Side	MASK Right Side
x	295	291
y	306	300

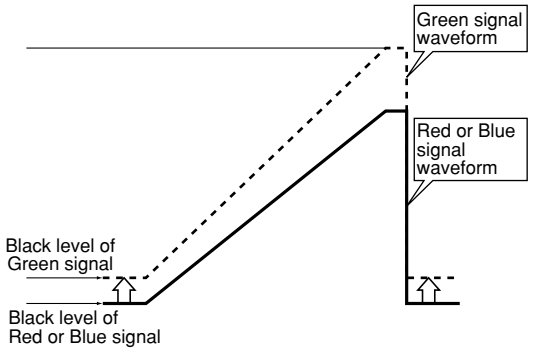
■ Mask Level Adjustment

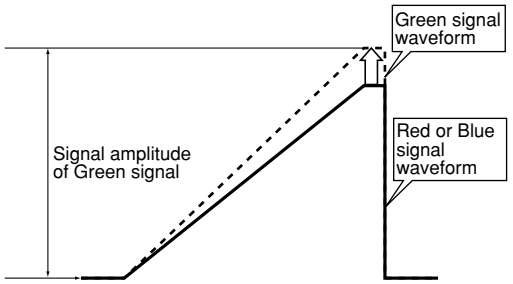
Input Signal	Adjusting Point	Adjusting Method
———	VIDEO OPTION mode in Factory mode SIDE MASK LEV. R SIDE LEVEL : key 1 G SIDE LEVEL : key 2 B SIDE LEVEL : key 3	**Side mask color / Level Adjustment** Set the indicated value with the keys on the remote control unit.

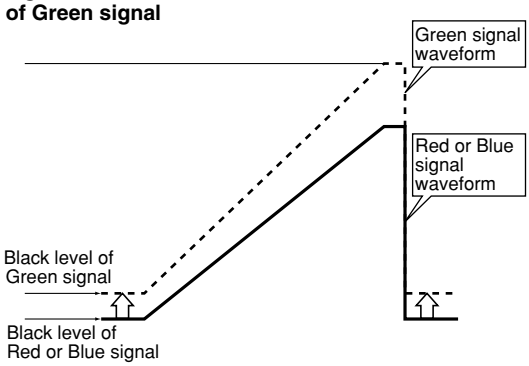
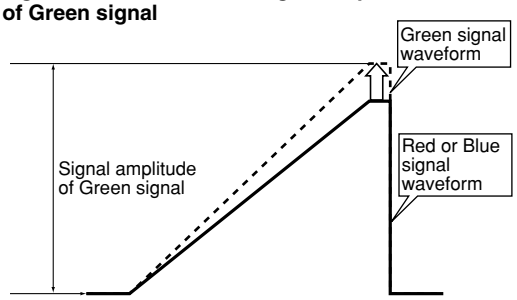
■ White Balance Adjustment

• Video Card (CMPAV05) is necessary for white balance adjustment for Video signal of RGB Assy.
• Adjust with Video system signal (525i) and RGB (PC VGA) signal.
• Adjust so that the Red and Blue signals becomes the same level and amplitude by reference with Green signal.

Input Signal	Step	Adjusting Method
Video signal	1	Connect a Video card in RGB Assy through a jig cable, and set it in the state that RGB Assy can measure. (Refer to page 141 "Diagnosis of the Video Card (CMPAV05)".) Cannot measure the signal level that does not use a jig cable. Note: Be careful in the direction of connector of a jig cable.
	2	Input a 525i signal to INPUT1 or INPUT2 with a component signal. A signal pattern is only luminance signal such as lamp signal and a STEP signal. And use the signal which black level (0IRE) and gradation can confirm. Note: May use a standard NTSC Video signal as Y (luminance) signal of component signal.
	3	In the signal input function (INPUT1 or INPUT2), perform the display mode of VIDEO signal to component. MENU → SETUP → VIDEO SIGNAL : COMPONENT
	4	Turn to standby once, and perform power supply ON with the factory mode once again. MENU → SET → POWER ON
	5	**Turn ACL SW setting to OFF.** INITIALIZE mode ACL SW : 3 key Select OFF by right and left keys.
	6	**Decrease three steps of MAT CONT adjustment value of OFFSET-RGB1.** OFFSET mode: Select the RGB 1 mode by top and bottom keys MAT CONT : 1 key Decrease three steps of adjustment value by right and left keys.
	7	**Decrease two steps of MAT BRIGHT adjustment value of OFFSET-RGB1.** OFFSET mode: Select the RGB 1 mode by top and bottom keys MAT BRIGHT : 2 key Decrease two steps of adjustment value by right and left keys.
	8	Take a trigger of oscilloscope with HD_PLL (3.3Vp-p) of K4805.
	9	Measure a signal waveform of Green signal at K4603, and measure the black level (0IRE) of signal and signal amplitude.
	10	**AD R LOW adjustment** Measure the black level (0IRE) of Red signal at K4602, and adjust so that the level of AD R LOW to match the black level (0IRE) of Green signal which measured with step 10. Adjustment error: ± 0.05V OFFSET mode: Select the RGB 1 mode by top and bottom keys AD R LOW : 9 key Adjust by right and left keys.
	11	**AD R HIGH adjustment** Measure the signal amplitude of Red signal at K4602, and adjust so that the level of AD R HIGH to match the signal amplitude of Green signal which measured with step 10. Adjustment error: ± 0.05V OFFSET mode: Select the RGB 1 mode by top and bottom keys AD R HIGH : 6 key Adjust by right and left keys.
	12	**AD B LOW adjustment** Measure the black level (0IRE) of Blue signal at K4604, and adjust so that the level of AD B LOW to match the black level (0IRE) of Green signal which measured with step 10. Adjustment error: ± 0.05V OFFSET mode: Select the RGB 1 mode by top and bottom keys AD B LOW :11 key Adjust by right and left keys.
	13	**AD B HIGH adjustment** Measure the signal amplitude of Blue signal at K4604, and adjust so that the level of AD B HIGH to match the signal amplitude of Green signal which measured with step 10. Adjustment error: ± 0.05V OFFSET mode: Select the RGB 1 mode by top and bottom keys AD B HIGH : 8 key Adjust by right and left keys.

<table>
<tr><th>Input Signal</th><th>Step</th><th>Adjusting Method</th></tr>
<tr><td rowspan="4">Video signal</td><td></td><td>● Adjust the black level of Red and Blue signals to reference with black level of Green signal
 

● Adjust the signal amplitude of Red and Blue signals to reference with signal amplitude of Green signal
 
</td></tr>
<tr><td>14</td><td>Increase three steps of MAT CONT adjustment value of OFFSET-RGB1.
OFFSET mode: Select the RGB 1 mode by top and bottom keys
MAT CONT : 1 key
Increase three steps of adjustment value by right and left keys.</td></tr>
<tr><td>15</td><td>Increase two steps of MAT BRIGHT adjustment value of OFFSET-RGB1.
OFFSET mode: Select the RGB 1 mode by top and bottom keys
MAT BRIGHT : 2 key
Increase two steps of adjustment value by right and left keys.</td></tr>
<tr><td>16</td><td>Turn ACL SW setting to ON.
INITIALIZE mode
ACL SW : 3 key
Select ON by right and left keys.</td></tr>
<tr><td rowspan="6">RGB (PC) signal</td><td>1</td><td>Input a RGB (PC) signal to INPUT1 or INPUT2.
A signal pattern is only luminance signal such as lamp signal and a STEP signal.
And use the signal which black level (0IRE) and gradation can confirm.
• Recommended signal: VESA VGA@60Hz</td></tr>
<tr><td>2</td><td>Turn to standby once, and perform power supply ON with the factory mode once again.
MENU → SET → POWER ON</td></tr>
<tr><td>3</td><td>Take a trigger of oscilloscope with HD_PLL (3.3Vp-p) of K4805.</td></tr>
<tr><td>4</td><td>Measure the signal waveform of Green signal at K4603, and measure the black level (0IRE) of signal and signal amplitude.</td></tr>
<tr><td>5</td><td>AD R LOW adjustment
Measure the black level (0IRE) of Red signal at K4602, and adjust so that the level of AD R LOW to match the black level (0IRE) of Green signal which measured with step 10 of video signal.
Adjustment error: ± 0.05V
OFFSET mode: Select the RGB 1 mode by top and bottom keys
AD R LOW : 9 key
Adjust by right and left keys.</td></tr>
<tr><td>6</td><td>AD R HIGH adjustment
Measure the signal amplitude of Red signal at K4602, and adjust so that the level of AD R HIGH to match the signal amplitude of Green signal which measured with step 10 of video signal.
Adjustment error: ± 0.05V
OFFSET mode: Select the RGB 1 mode by top and bottom keys
AD R HIGH : 6 key
Adjust by right and left keys.</td></tr>
</table>

Input Signal	Step	Adjusting Method
RGB (PC) signal	7	**AD B LOW adjustment** Measure the black level (0IRE) of Blue signal at K4604, and adjust so that the level of AD B LOW to match the black level (0IRE) of Green signal which measured with step 10 of video signal. Adjustment error: ± 0.05V OFFSET mode: Select the RGB 1 mode by top and bottom keys AD B LOW : 11 key Adjust by right and left keys.
	8	**AD B HIGH adjustment** Measure the signal amplitude of Blue signal at K4604, and adjust so that the level of AD B HIGH to match the signal amplitude of Green signal which measured with step 10 of video signal. Adjustment error: ± 0.05V OFFSET mode: Select the RGB 1 mode by top and bottom keys AD R LOW : 8 key Adjust by right and left keys.
		● **Adjust the black level of Red and Blue signals to reference with black level of Green signal**  ● **Adjust the signal amplitude of Red and Blue signals to reference with signal amplitude of Green signal** 

■ Color Balance Adjustment

Input Signal	Adjusting Point	Adjusting Method
Fresh color	REFERENCE1 mode in Factory mode COLOR : key 3 TINT : key 4	**Color Balance Adjustment** After adjusting the white balance, check the flesh color of figures in LD still pictures. If the color is not natural, adjust it with the keys on the remote control unit.

Reference : Adjustment values using the Media color-difference meter (A-100)

			NTSC	HD	PC
White Balance	20% window-step signal (-3dB)	x	298	299	302
		y	307	315	308
		Y	6.6	5.7	2.9
	80% window-step signal (-3dB)	x	293	292	297
		y	309	312	319
		Y	135	148	66.2
Flesh Color	Window chroma signal	x	430	427	–
		y	365	362	–

■ Timing Adjustment of X and Y DRIVE Assys Control Signal

- **Purpose**
  - Pulse module loads in DRIVE Assy as one of heat measures of DRIVE Assy. Adjust the drive timing of the pulse module driving parallel with VR.
  - Pulse module has each peculiar delay time. Readjustment is necessary when replaced the pulse module in the X and Y DRIVE Assys.
- **Adjustment Method**

  CR delay circuit is each inserted on signal path of four control signals (SUS-U, SUS-B, SUS-D, SUS-G) driving the pulse module.
  Quantity of delay can adjust pulse module of one side with VR.
  Adjust VR while measuring a waveform of the pulse module, and match a timing.

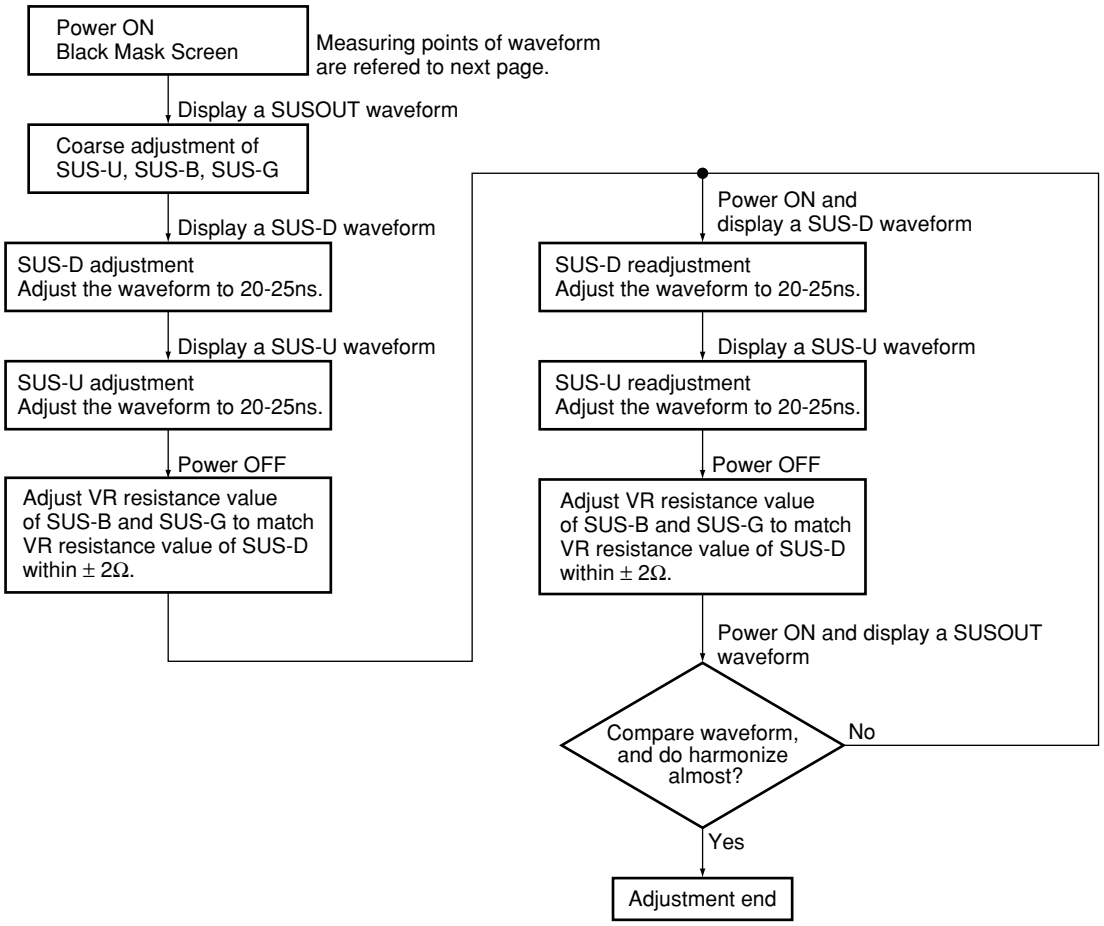
Adjustment VR

	X DRIVE	Y DRIVE
SUS-U	VR3203	VR2204
SUS-D	VR3202	VR2203
SUS-B	VR3201	VR2202
SUS-G	VR3200	VR2201

Test pin for adjustment and measurment

Pulse Module	X DRIVE		Y DRIVE	
	Upper	Lower	Upper	Lower
SUSOUT	K3105	K3106	K2212	K2203
SUS-U	K3200	K3204	K2220	K2224
SUS-D	K3108	K3205	K2207	K2225

- **Adjustment Procedure**


Power ON
Black Mask Screen
Measuring points of waveform are refered to next page.
Display a SUSOUT waveform
Coarse adjustment of SUS-U, SUS-B, SUS-G
Display a SUS-D waveform
SUS-D adjustment
Adjust the waveform to 20-25ns.
Display a SUS-U waveform
SUS-U adjustment
Adjust the waveform to 20-25ns.
Power OFF
Adjust VR resistance value of SUS-B and SUS-G to match VR resistance value of SUS-D within ± 2Ω.
Power ON and display a SUS-D waveform
SUS-D readjustment
Adjust the waveform to 20-25ns.
Display a SUS-U waveform
SUS-U readjustment
Adjust the waveform to 20-25ns.
Power OFF
Adjust VR resistance value of SUS-B and SUS-G to match VR resistance value of SUS-D within ± 2Ω.
Power ON and display a SUSOUT waveform
Compare waveform, and do harmonize almost?
No
Yes
Adjustment end

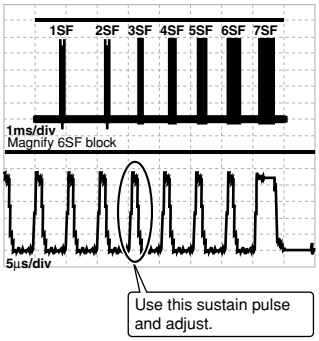
As for this adjustment, adjustment with set state is difficult.
Therefore replace it every Assy when replacing the pulse module.

Measuring Waveform of Pulse Module Timing Adjustment

Timing adjustment of the pulse module control signal adjusts with the sustain pulse of eighth pulse (X DRIVE) and the ninth pulse (Y DRIVE) from the back of 6SF.

● Measuring point of waveform

Y DRIVE SUSOUT waveform



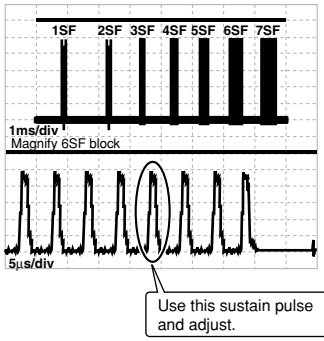
CH1 : Y SUSOUT Under (K2203), 50V/div
CH2 : Y SUSOUT Upper (K2212), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

- Perform adjustment of waveform with a black mask screen.
- It is easy to adjust when turned field AB offset to OFF (RS-232C command: OCN) in adjustment.

Note:
- Sampling rate of oscilloscope sets it more than 500MS/s in order to perform ns order adjustment.
- Collecting calibration of probe before adjustment by all means.

- Connect GND of probe measuring waveform to SUSGND terminal by all means.
- Precise waveform is not displayed, and an adjustment gap may occur that does not collect GND properly.

X DRIVE SUSOUT waveform

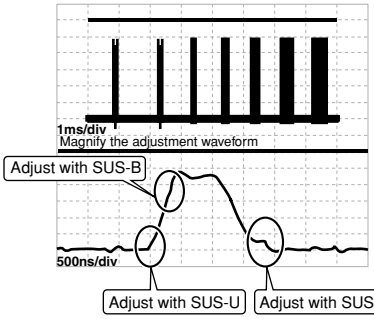


CH1 : X SUSOUT Under (K3106), 50V/div
CH2 : X SUSOUT Upper (K3105), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

When took waveform be each drive Assy unit, measure it at the fourth sustain pulse from the back except for a large width sustain pulse.
Therefore, when measured both waveform of the X and Y drives together, it becomes the sustain pulse of 8 and 9 pulses from the back.

● Waveform coarse adjustment

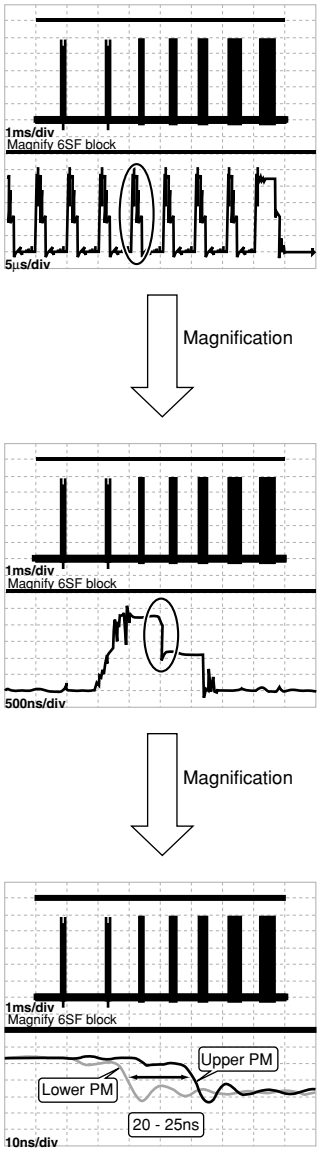
Measure the SUSOUT waveform



CH1 : Y SUSOUT Under (K2203), 50V/div
CH2 : Y SUSOUT Upper (K2212), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

When there is a gap with waveform of CH1 / CH2 of the part which enclosed in the following circle, adjust required VR to overlap the waveform.

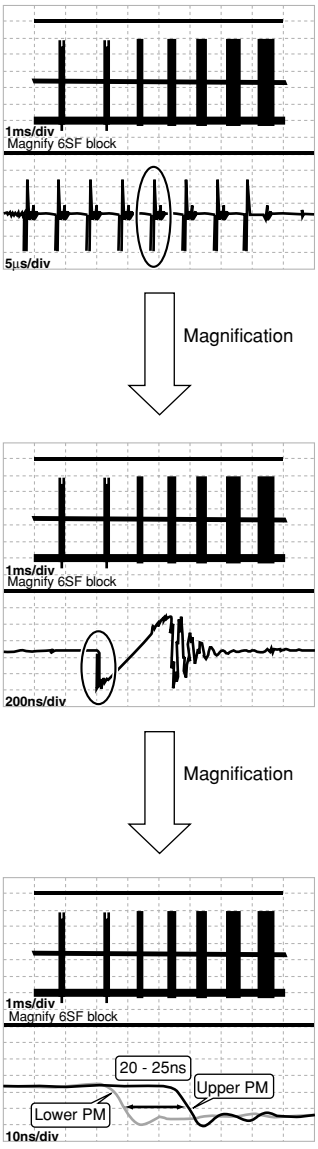
● SUS-D Adjustment (Y DRIVE)



CH1 : Y SUS-D Under (K2225), 50V/div
CH2 : Y SUS-D Upper (K2207), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

Caution:
Not absolutely mistaking upper and lower of waveform.

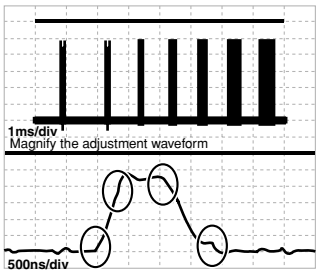
● SUS-U Adjustment (Y DRIVE)



CH1 : Y SUS-U Under (K2224), 50V/div
CH2 : Y SUS-U Upper (K2220), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

● Waveform Confirmation in Adjustment completion

Measure the SUSOUT waveform



CH1 : Y SUSOUT Under (K2203), 50V/div
CH2 : Y SUSOUT Upper (K2212), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

Confirm it to waveform of CH1 / CH2 of the part which enclosed in the following circle whether there is not a large gap.
(A gap of the quantity that shifts 20nS and adjusted remains.)

When adjust in the power supply ON state, change so that the quantity of gap that adjusted by temperature-rise of the pulse module becomes small.
Therefore, perform high power OFF (RS-232C command: DRF) except measurement time of waveform when adjusts, and adjustment error by temperature-rise does not occur.

■ SUS-B Ground Timing Adjustment

It is necessary to readjust this adjustment when replaced the X or Y DRIVE Assy and the pulse module.

- **Measurement point and method**

Measurement point of waveform of X and Y DRIVE Assy in timing adjustment is test pin of SUSOUT of the pulse module of bottom of the main unit.
X DRIVE Assy : K3106 Y DRIVE Assy : K2203
Measurement screen : White mask

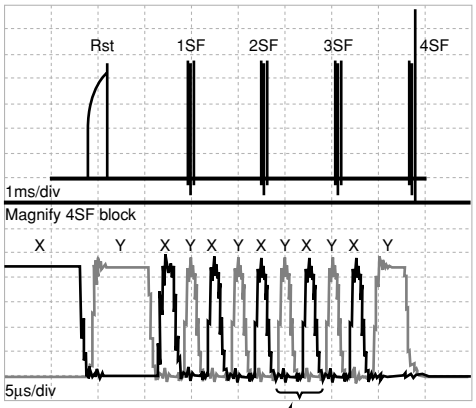
The measurement is easy to perform when turns field AB alternation to OFF. (RS-232C command: OCN)

Measure a sustain pulse of the fourth pulse (X DRIVE) and the fifth pulse (Y DRIVE) from the back of the fourth FS, and adjust. In the start section of this sustain pulse, waveform has inflection point with the timing when SUS-B becomes ON. Adjust so that the voltage of this inflection point is the nearest to 150V and do not become less than 150V.

Adjustment parameter
X DRIVE: XSUSB (RS-232C command : XSB)
Y DRIVE: YSUSB (RS-232C command : YSB)

Note:
• Connect GND of probe measuring waveform to SUSGND terminal by all means.
• Precise waveform is not displayed, and an adjustment gap may occur that does not collect GND properly.

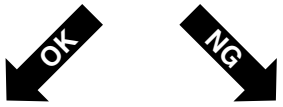
- **Waveform in the measurement**

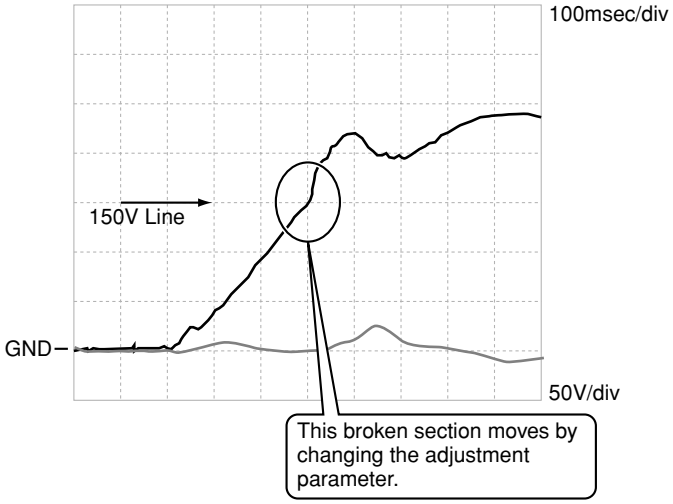


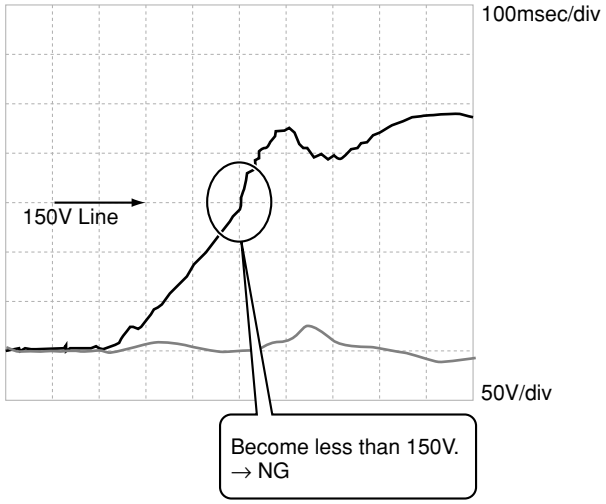
CH1 : Y SUSOUT (K2203), 50V/div
CH2 : X SUSOUT (K3106), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

Measure a waveform of this section and adjust.

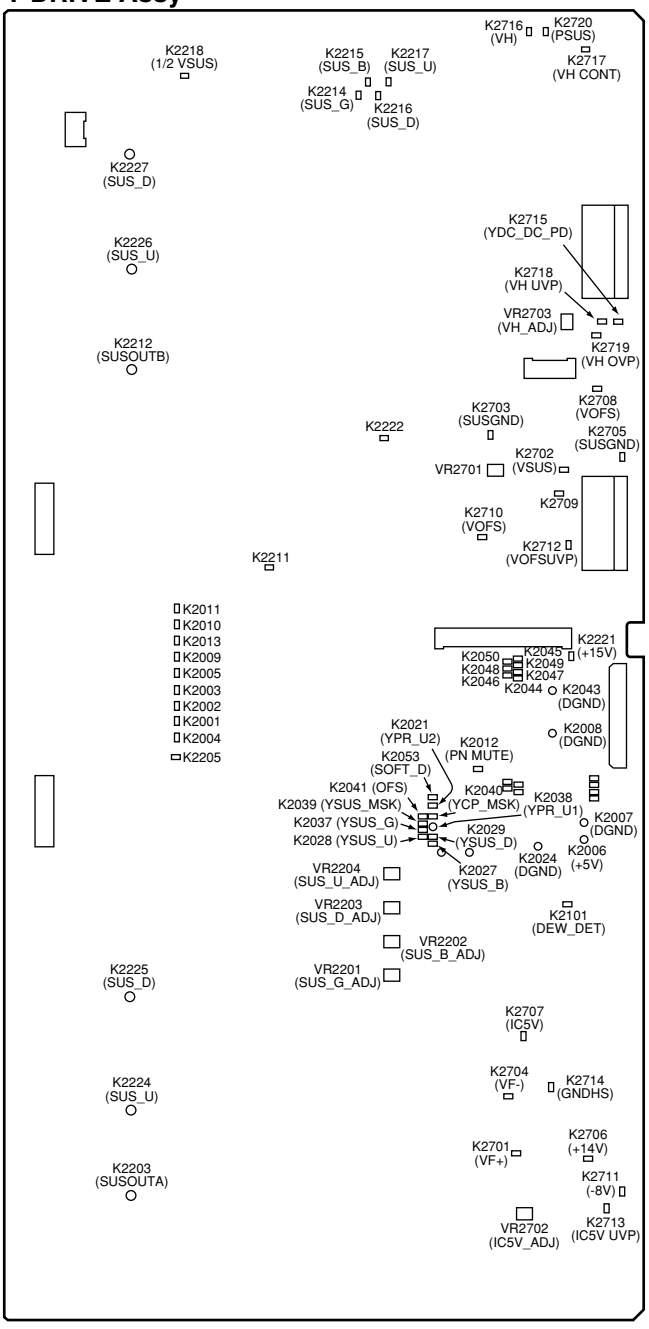
Magnify the fourth pulse sustain pulse (XSUSOUT waveform) from the back of the above waveform.



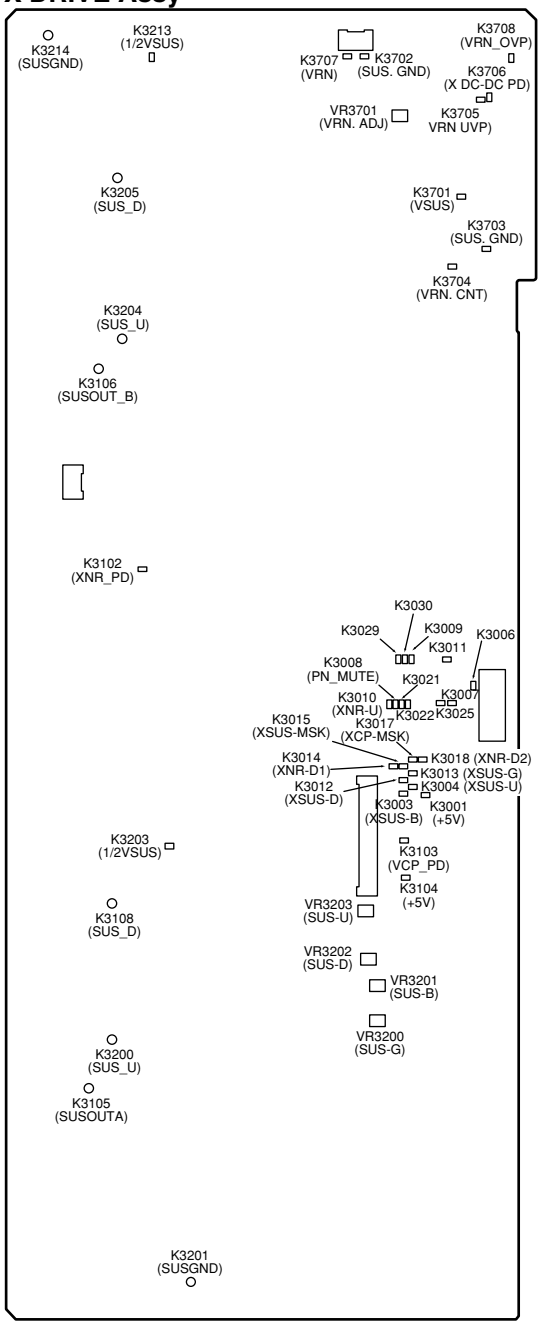




Y DRIVE Assy



X DRIVE Assy

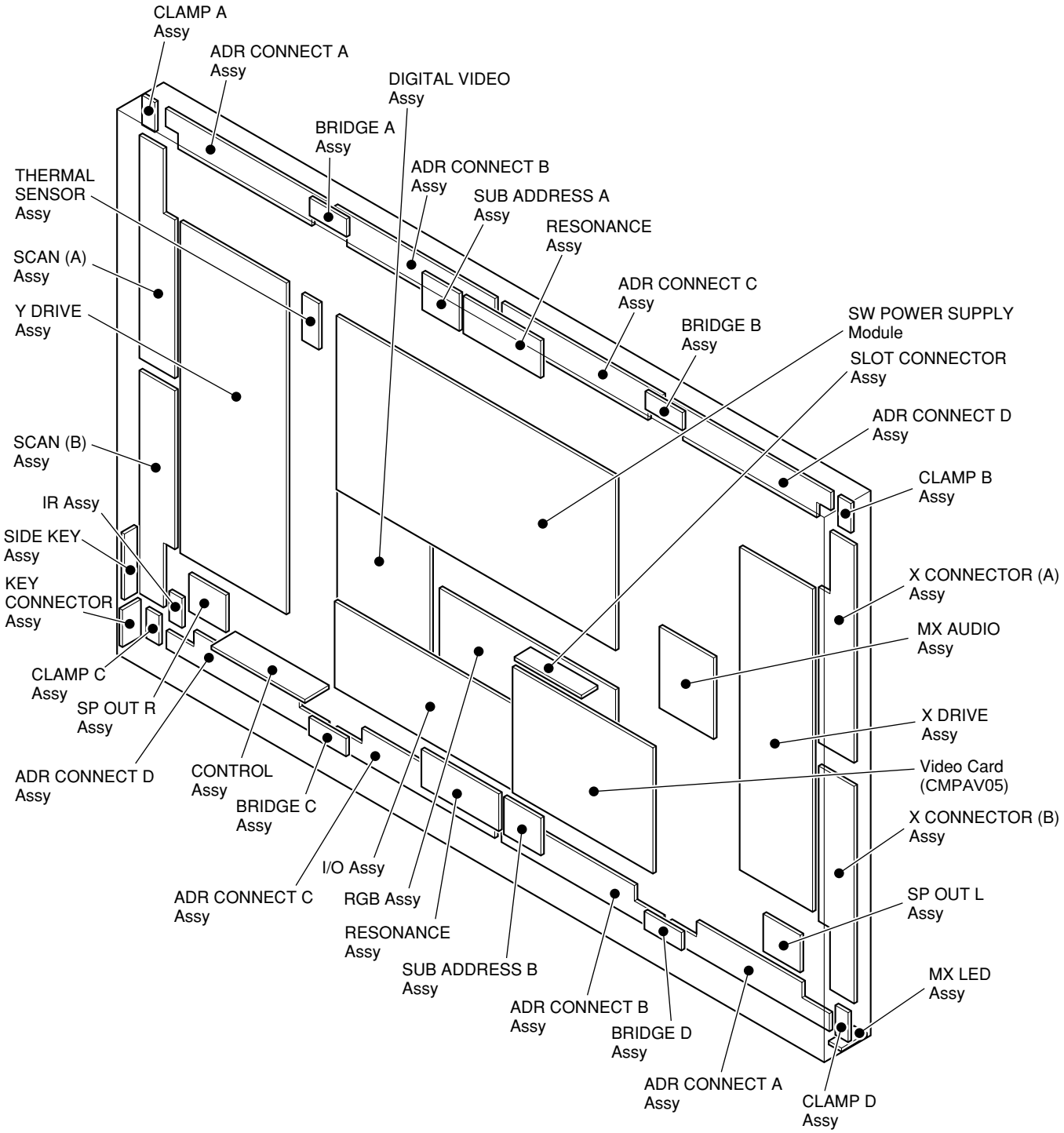


Adjusting Points

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 PCB LOCATION



● Rear View

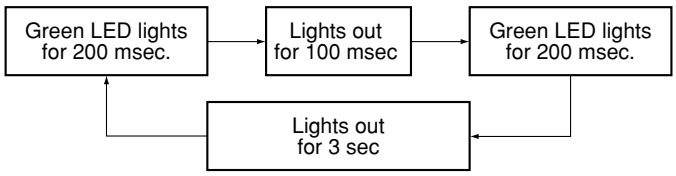
7.1.2 SHUT DOWN/POWER DOWN DIAGNOSIS BY LED DISPLAY

When internal circuit abnormality and other operation abnormality occurred from this unit, self-diagnose display function by STANDBY/ON (LED) indicator is loaded.
Each NG point by LED blinking and a PD (power down) point are as follows.

● Shut Down

• Operations : When a microcomputer detected abnormality, turn the power supply to OFF.
• LED display : Green blinks

Examples: LED blinks in the DIGITAL-IIC communication NG



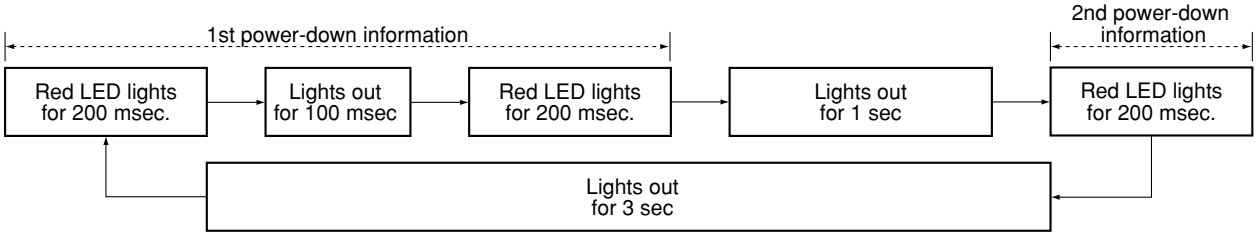
Number of blinks	Name
1	Panel Microcomputer NG
2	DIGITAL-IIC communication NG
3	Dewdrop abnormality
4	Temperature abnormality
5	FAN abnormality
6	Module microcomputer NG
7	Wide microcomputerNG
8	RGB-IIC communication NG
9	Audio NG

How to release the shut down state
When turn the power supply ON by remote control units, release from the shut down state, and turn the power supply ON.
(It is not necessary to turn the AC power OFF.)

● Power Down

• Operations : When this unit becomes the dangerous state, turn the power supply OFF with the protection circuit.
• LED display : Red blinks
* When protection circuit more than two places almost worked simultaneously, display LED in order to 1st - 2nd.

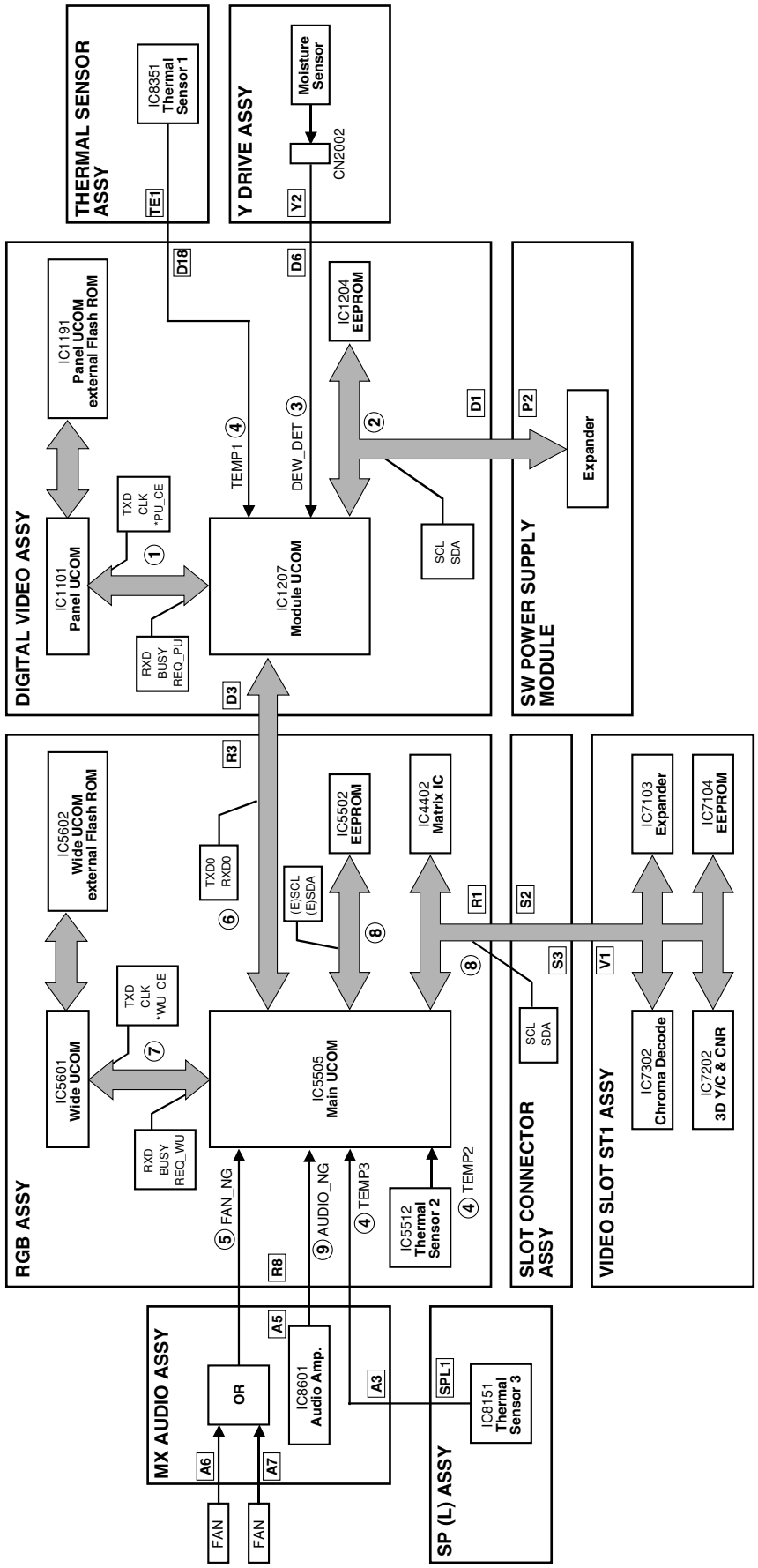
Examples: LED blinks in the 1st power down = Y-DC/DC CONVERTER, 2nd power down = Y-DRIVE


1st power-down information
2nd power-down information
Red LED lights for 200 msec.
Lights out for 100 msec
Red LED lights for 200 msec.
Lights out for 1 sec
Red LED lights for 200 msec.
Lights out for 3 sec

Number of blinks	Name
1	Y-DRIVE
2	Y-DC/DC CONVERTER
3	X-DC/DC CONVERTER
4	X-DRIVE
5	Power supply
6	Address junction
7	Address resonance
8	DIGITAL-DC/DC CONVERTER

How to release the power down state
AC power OFF
↓
Wait for PD LED in the power supply module disappearing (for around 30 seconds).
↓
Afterwards, wait moreover for five seconds.
↓
Return by AC power ON.
* After power down release, this unit rises up in the standby state.

● Block Diagram of Shut Down Signal System



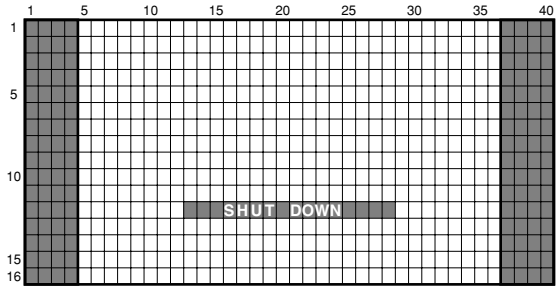
Note: ① - ⑧ show LED flashing number of times when shut down occurred in this route.

● Shut down diagnosis

① Panel microcomputer NG

When a module microcomputer failed in communication with a panel microcomputer, this NG occurs.
Shut down after OSD display for 30 seconds from the NG detection.

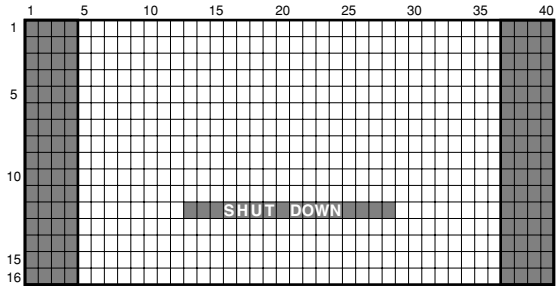
Abnormality to expect
Open / Short of communication line in the Assy



② DIGITAL-IIC communication NG

When a module microcomputer failed in communication with outside EEPROM or EXPANDER, this NG occurs.
Shut down after OSD display for 30 seconds from the NG detection.
* However, this communication NG may occur in the standby state.

Abnormality to expect
- Open / Short of communication line in the Assy
- Breaking of wire between DIGITAL VIDEO Assy (D1) and SW POWER SUPPLY Module (P2).



③ Dew drop detection

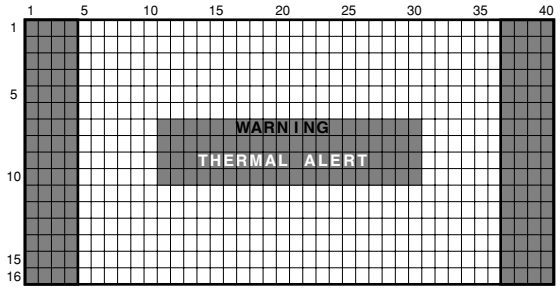
When it becomes the dew drop state in this unit, this NG occurs.
After the dew drop detection, shut down immediately.

Abnormality to expect for dew drop
Disconnect a connector CN2002 between Dew drop sensor and Y DRIVE Assy.

④ Temperature abnormality

When temperature of this unit became abnormally high, this NG occurs.
Shut down after OSD display from the NG detection for 30 seconds.

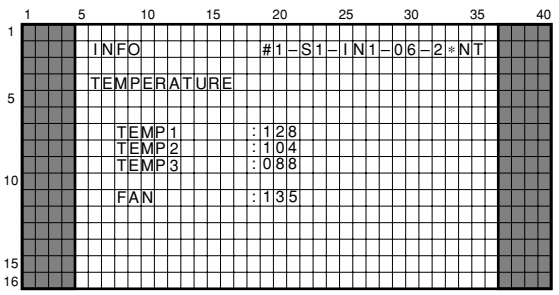
Abnormality to expect when it occurs in the environment that is not high-temperature
- Disconnect a connector between SP TERMINA (L) Assy (SPL1) and MX AUDIO Assy (A3).
- Disconnect a connector between MX AUDIO Assy (A5) and RGB Assy (R8).
- Disconnect a connector between DIGITAL VIDEO Assy (D18) and temperature sensor 1 (TE1).



Reference

Shut down temperature of each temperature sensor
TEMP2 data ≧ 150 (≒ 80°C)
TEMP3 data ≧ 101 (≒ 56°C)
* TEMP1 is not shut down by temperature, and it shuts down when connector was disconnected.

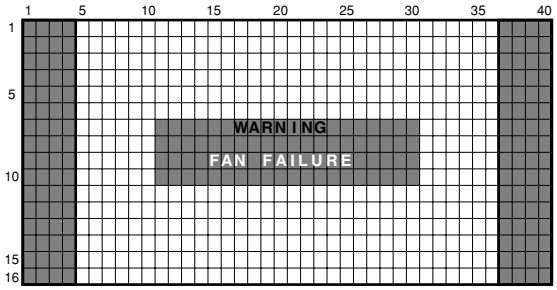
Temperature display by "INFORMATION" of the factory menu
TEMP1 (°C) ≒ TEMP1 (data) -50
TEMP2 (°C) ≒ TEMP2 (data) /2+5
TEMP3 (°C) ≒ TEMP3 (data) /2+5



⑤ FAN NG

When a fan does not function, this NG occurs.
Shut down after OSD display for 30 seconds from the NG detection.

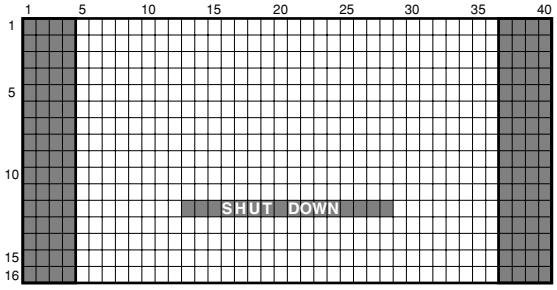
* FAN NG detection functions only in case of following.
• When FAN CONTROL setting is maximum
• When sensor temperature of TEMP3 is more than 30°C with FAN CONTROL setting is AUTO.
(even if connector is left when does not turn the FAN, this unit does not work.)



Abnormality to expect
• Disconnect a junction connector between FAN (A6) and MX AUDIO Assy (A7).
• Disconnect a connector between MX AUDIO Assy (A5) and RGB Assy (R8).
• FAN forced stop by an alien substance involving it.

⑥ Module microcomputer NG

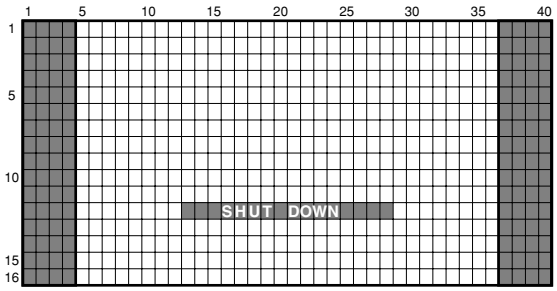
When a main microcomputer failed in communication with a module microcomputer, this NG occurs.
Shut down after OSD display for 30 seconds from the NG detection.
* However, this communication NG may occur by the standby state.



Abnormality to expect
• Open / Short of communication line in the Assy.
• Disconnect a connector between RGB Assy (R3) and DIGITAL VIDEO Assy (D3).
• Writing defectiveness of module microcomputer (IC1207) software.

⑦ Wide microcomputer NG

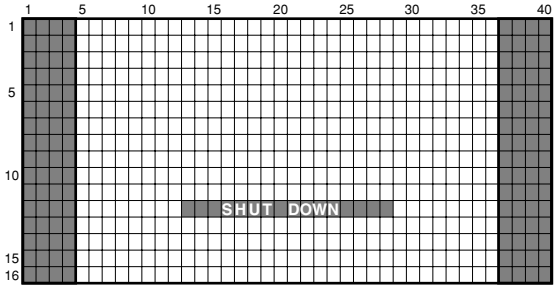
When a main microcomputer failed in communication with a wide microcomputer, this NG occurs.
Shut down after OSD display for 30 seconds from the NG detection.



Abnormality to expect
• Open / Short of communication line in the Assy.
• Software writing defectiveness of wide microcomputer (IC5601).
• Writing defectiveness of outside Flash ROM (IC5602) on the wide microcomputer.

⑧ RGB-IIC communication NG

When a main microcomputer failed in IIC communication, this NG occurs.
Shut down after OSD display for 30 seconds from the NG detection.
* However, this communication NG may occur by the standby state.



Abnormality to expect
• Open / Short of communication line in the Assy.
• SLOT and the insertion of the SLOT junction PC Board are incomplete.

Notes: There is the case that it becomes the following symptom except NG when the SLOT insertion is incomplete.

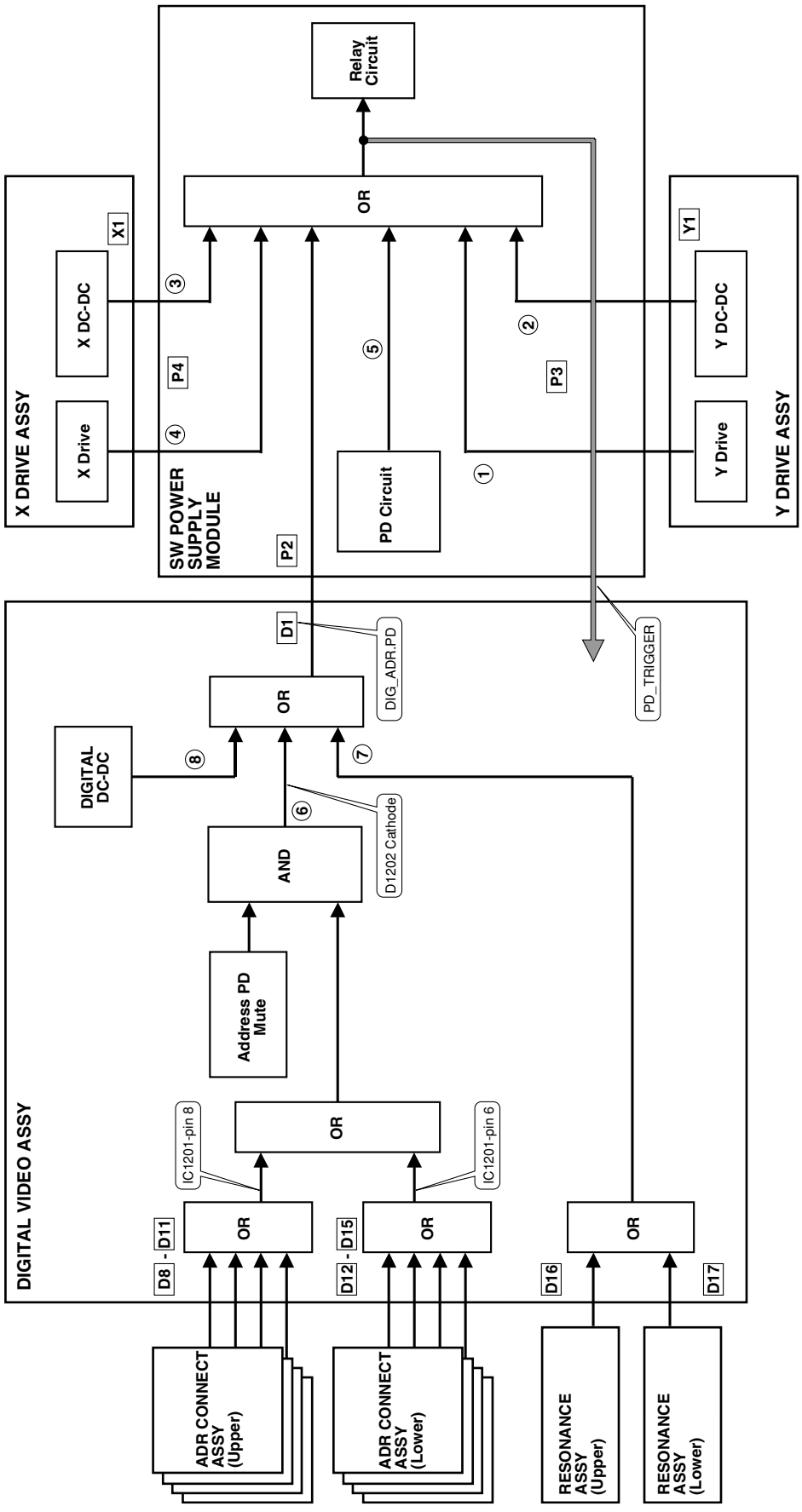
• Audio of INPUT3 and 4 are not output. • Do not switch from INPUT3 to 5 (SLOT function). • Video signal of INPUT1 and 2 are not appear.

⑨ Audio NG

When DC component added on the speaker output line, this NG occurs.
After the NG detection, shut down immediately.

Abnormality to expect
• Disconnect a connector between MX AUDIO Assy (A5) and RGB Assy (R8).
• Short-circuits between + and - of C8615 and C8622.

● **Block Diagram of Power Down Signal System**



Note: ① - ⑧ show LED flashing number of times when power down occurred in this route.

● **Kind and function of the various protection circuit (P.D. circuit)**

Assy Name	OSD Display	Red LED Number of Blinks	Kind of P.D. Circuit	Function	Remarks
Y DRIVE Assy	Y-DRV	1	VCP OCP	P.D. by VCP overcurrent	
	Y-DDC	2	VOFS OVP	P.D. by VOFS overvoltage	
			VOFS UVP	P.D. by VOFS undervoltage (= overcurrent)	
			VH OVP	P.D. by VH overvoltage	
			VH UVP	P.D. by VH undervoltage (= overcurrent)	
			IC5V UVP	P.D. by IC5V undervoltage (= overcurrent)	
X DRIVE Assy	X-DDC	3	VRN OVP	P.D. by VRN overvoltage	
			VRN UVP	P.D. by VRN undervoltage (= overcurrent)	
	X-DRV	4	VCP OCP	P.D. by VCP overcurrent	
			RESET OCP	P.D. by reset circuit overcurrent	
SW POWER SUPPLY Module	POWER	5	VSUS OVP	P.D. by VSUS overvoltage	
			VSUS UVP	P.D. by VSUS undervoltage (= overcurrent)	
			VADR OVP	P.D. by VADR overvoltage	
			VADR UVP	P.D. by VADR undervoltage (= overcurrent)	
			15V OVP	P.D. by 15V overvoltage	
			15V UVP	P.D. by 15V undervoltage (= overcurrent)	
			12V UVP	P.D. by 12V undervoltage (= overcurrent)	
			6.5V OVP	P.D. by 6.5V overvoltage	
			6.5V UVP	P.D. by 6.5V undervoltage (= overcurrent)	
			13.5V UVP	P.D. by 13.5V undervoltage (= overcurrent)	
			-9V UVP	P.D. by -9V undervoltage (= overcurrent)	
			+B OVP	P.D. by +B overvoltage	
			+B OCP	P.D. by +B overcurrent	
			AC200V P.D.	P.D. by AC200V apply	Note 1
				PFC module overheat protection	
				VSUS arc resistance overheat protection	
ADR CONNECT Assy	ADRES	6	ADR.PD	P.D. by disconnecting the connector	
RESONANCE Assy	ADR-K	7	ADR.K.PD	P.D. by ICP open and TCP defective	
DIGITAL VIDEO Assy	DC-DC	8	5.0V OVP	P.D. by 5V overvoltage	
			5.0V UVP	P.D. by 5V undervoltage (= overcurrent)	
			3.3V OVP	P.D. by 3.3V overvoltage	
			3.3V UVP	P.D. by 3.3V undervoltage (= overcurrent)	
			2.5V OVP	P.D. by 2.5V overvoltage	
			2.5V UVP	P.D. by 2.5V undervoltage (= overcurrent)	

Reference
OVP : **O**ver **V**oltage **P**rotect
UVP : **U**nder **V**oltage **P**rotect
OCP : **O**ver **C**urrent **P**rotect

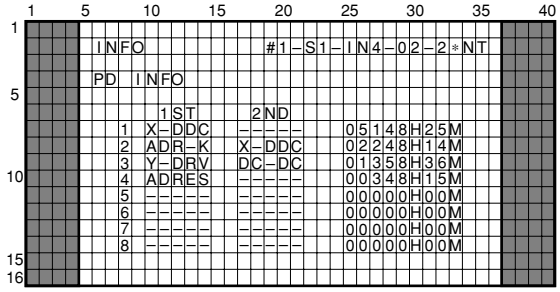
Note 1: AC200V P.D. is not applicable to the CMP5000WXE model.

● Diagnosis Method in Power Down

1st/2nd/time stamp are stored eight times of power down in the past.

① OSD display of PD history

Display with "INFORMATION" of the factory menu.



Display of PD point

Power Down Point	OSD Display
Y-DRIVE	Y-DRV
Y-DC/DC COVERTER	Y-DDC
X-DC/DC CONVERTER	X-DDC
X-DRIVE	X-DRV
Power supply	POWER
ADDRESS junction	ADRES
ADDRESS resonance	ADR-K
DC/DC CONVERTER (DIGITAL)	DC-DC

Time stamp display
[OOOOOH] : HOUR, [OOM] : MINUTE

Example)
Time stamp display is [65432H10M] → 65432 hours 10 minutes

② PD history read in by RS-232C command "GPD"

Order	Data contents	Size
1	The latest 1st PD point	1 byte
2	The latest 2nd PD point	1 byte
3	The latest PD time stamp	7 byte
4	1st PD point before twice	1 byte
5	2nd PD point before twice	1 byte
6	PD time stamp before twice	7 byte
7	1st PD point before three times	1 byte
8	2nd PD point before three times	1 byte
9	PD time stamp before three times	7 byte
10	1st PD point before four times	1 byte
11	2nd PD point before four times	1 byte
12	PD time stamp before four times	7 byte
13	1st PD point before five times	1 byte
14	2nd PD point before five times	1 byte
15	PD time stamp before five times	7 byte
16	1st PD point before six times	1 byte
17	2nd PD point before six times	1 byte
18	PD time stamp before six times	7 byte
19	1st PD point before seven times	1 byte
20	2nd PD point before seven times	1 byte
21	PD time stamp before seven times	7 byte
22	1st PD point before eight times	1 byte
23	2nd PD point before eight times	1 byte
24	PD time stamp before eight times	7 byte

Data of PD point

Power Down Point	"GPD" Data
Y-DRIVE	1
Y-DC/DC COVERTER	2
X-DC/DC CONVERTER	3
X-DRIVE	4
Power supply	5
ADDRESS junction	6
ADDRESS resonance	7
DC/DC CONVERTER (DIGITAL)	8

Time stamp data
before 5 byte: HOUR, after 2 byte: MINUTE

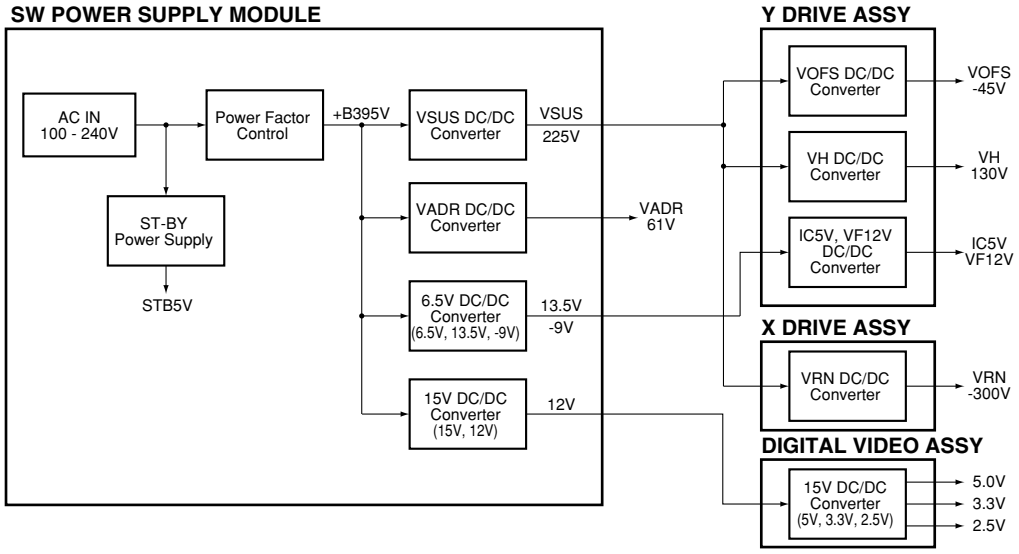
Example)
Time stamp is [6543210] → 65432 hours 10 minutes

● Diagnosis of the error point in the various protection circuit (P.D. circuit) operation (Red LED blinks)

Number of Blinks	P.D. Point in Operation	Error Pont	Possible Part of Error	Circuit State	Operation P.D. Circuit	Diagnosis Condition
1	Y DRIVE	Y DRIVE Assy	IC2206, IC2214 (Pulse module), IC2203, IC2204, IC2212, IC2213, IC2213, IC2217, R2209	K2211 Lo	VCP OCP	
2	Y DC DC	VOFS D/D CONV. BLOCK (Y DRIVE Assy)	IC2702, IC2709, IC2715	K2712 Lo	VOFS OVP	
		VOFS D/D CONV. BLOCK (Y DRIVE Assy)	IC2701, IC2702, IC2709, IC2715	K2709 Lo	VOFS UVP	Drive section (control signal, output elements etc.) in normal operation
			Q2211, Q2212, R2277, IC2208, IC2210			VOFS D/D CONV. BLOCK in normal operation
		VH D/D CONV. BLOCK (Y DRIVE Assy)	IC2712, IC2716	K2719 Lo	VH OVP	
		VH D/D CONV. BLOCK (Y DRIVE Assy)	IC2711, IC2712, IC2716	K2718 Lo	VH UVP	Drive section (control signal, output elements etc.) in normal operation
		SCAN (A), (B) Assy	SCAN IC			VH D/D CONV. BLOCK in normal operation
		IC5V D/D CONV. BLOCK (Y DRIVE Assy)	IC2704, IC2706, IC2717			SCAN Assy in normal operation
		SCAN (A), (B) Assy	SCAN IC	K2713 Lo	IC5V UVP	IC5V D/D CONV. BLOCK in normal operation
		IC5V D/D CONV. BLOCK (Y DRIVE Assy)	IC2704, IC2706, IC2717			SCAN Assy in normal operation
3	X DC DC	VRN D/D CONV. BLOCK (X DRIVE Assy)	IC3702, IC3712	K3708 Lo	VRN OVP	
		VRN D/D CONV. BLOCK (X DRIVE Assy)	IC3701, IC3702, IC3712	K3705 Lo	VRN UVP	Drive section (control signal, output elements etc.) in normal operation
		X DRIVE Assy	Q3122			VRN D/D CONV. BLOCK in normal operation
4	X DRIVE	X DRIVE Assy	IC3200, IC3201 (pulse module), IC3103, IC3104, IC3106, IC3107, IC3110, IC3113, R3109	K3103 Lo	VCP OCP	
			Q3122	K3102 Lo	VRN OCP	
5	PS	X DRIVE Assy	IC3200, IC3201 (Pulse module)			When P4 connector disconnected, P.D. does not occur
		Y DRIVE Assy	IC2206, IC2214 (Pulse module)			When P3 connector disconnected, P.D. does not occur
		MX AUDIO Assy	IC8601 (Audio IC)			When P6 connector disconnected, P.D. does not occur
		ADDRESS CONNECT A - D Assy, RESONANCE Assy, D/D CONV. BLOCK (DIGITAL VIDEO Assy)				When pin 5 of P2 connector disconnected, P.D. does not occur
		SW POWER SUPPLY Module	SW POWER SUPPLY Module			When the voltage is not output even if P4, P3 and P6 connectors disconnected
6	ADR	ADDRESS CONNECT A~D Assy	Disconnect D8 - D15 connectors		ADR. PD	
7	ADR K	RESONANCE Assy	TCP damage of IC6704 (ICP), disconnect D16 and D17 connectors, panel microcomputer is defective, outside Flash ROM of the panel microcomputer is defective.		ADR. K. PD	
8	DIGITAL DC DC	D/D CONV. BLOCK (DIGITAL VIDEO Assy)	IC1901	K1901 Lo	5.0V OVP	
				K1902 Lo	5.0V UVP	
		D/D CONV. BLOCK (DIGITAL VIDEO Assy)	IC1901	K1903 Lo	3.3V OVP	
				K1904 Lo	3.3V UVP	
		D/D CONV. BLOCK (DIGITAL VIDEO Assy)	IC1901	K1905 Lo	2.5V OVP	
				K1906 Lo	2.5V UVP	

Note: About PS PD
The condition that Red LED blinks five times (power supply PD)
1 When the internal protection circuit of SW POWER SUPPLY Module worked
2 When a microcomputer was not able to identify the PD point
↓
Being careful because the protection circuit of SW POWER SUPPLY Module cannot conclude that worked.

● Block diagram for Power supply section



● Supplementary information

1. Power on/off switch for the large-signal system (SW102)

Function: Only the power for the small-signal system (15V, 12V, 6.5V, 13.5V, and -9V) is on, and the power for the large-signal system (VSUS, VADR) is off.

Usage: Use when only an operational check for the small-signal system is required.

Supplementary information:
When this switch is to be used, the wires of pin 5 (DIG, ADR, and PD) of the P2 connector of the power-supply module should be disconnected to prevent the PD circuit from operating. To turn the power of the large-signal system off without using this switch, operation from an external PC through RS-232C commands "DRF" is basically required. In this case, the above procedure is not required, as the PD circuit is muted by software.

Method of power supply ON in the large signal system OFF state with RS-232C command

① Confirm that this unit is the standby state.
② Transmit RS-232C command "DRF."
③ Turn the power supply ON by remote control unit, side key or command "PON."

* When turn the power supply OFF once, return to setting of large signal system ON.
When turn the power supply ON in the large signal system OFF, transmit "DRF" command each time.

2. 200V AC power-down switch (SW101)

Function: While 200V AC voltage is applied, operation of the PD circuit is turned on and off (ON when the switch is set to 100V AC, and OFF when the switch is set to 200V AC).

Setting: For the CMP5000WXE model only, the switch is set to 200V, and for other models, it is set to 100V.

3. Temperature compensation of the VOFS voltage for the drive system

Function: Control the power supply voltage mentioned above according to temperature. (Temperature compensation works so that the voltage is lowered on the lower-temperature side, and is raised on the higher-temperature side.)

Purpose: To improve the yield by compensating the temperature characteristics of the panel.

Supplementary information:
For this model, temperature compensation is performed only for the VOFS voltage, and not for the VSUS voltage, and it is controlled by software.

4. When a fuse blows

- If a fuse blows, never turn the power on again only after replacing the fuse. (In most cases, the fuse itself did not have any problem. So as long as factors of overcurrent have not been removed, chances of destruction increase every time the power is turned on. In the worst case, about a dozen parts may be destroyed.)
- Principally, the whole power-supply module must be replaced.

5. Voltage adjustment of the panel drive

As this model employs the electronic VR system for the VSUS and VOFS voltages, and as the voltage-adjustment data are stored in the DIGITAL assembly, voltage adjustment of the panel drive is not necessary when the power-supply modules are changed. (For VADR, VH, and VRN, adjustments with semifixed VR controls are necessary.)

For this model, as the power-supply block has been developed and designed by an outside vendor, at the point you know which module is a cause of failure (through diagnosis described elsewhere in this manual), change the corresponding modules, and do not diagnose or repair the module.

Similarly, the switches and the semifixed VRs inside the power-supply module must not be adjusted without a special reason.

7.1.3 AUTOMATIC BACKUP OF DIGITAL VIDEO ASSY DATA

■ Description

Auto copies data of EEPROM (IC1204/2k bit) on the DIGITAL VIDEO Assy as data for backup in the Assy replacement to one part of EEPROM (IC5502/64k bit) of the RGB Assy (area A of figure below).
Therefore DIGITAL VIDEO Assy or main unit adjustment item in the RGB Assy replacement (data of EEPROM on DIGITAL VIDEO Assy) is succeeded to Assy after replacement.

Note : COLOR and TINT are main unit adjustment items, but does not automatic backup because there are data in area C (refer to figure below).

● Contents of EEPROM on the DIGITAL VIDEO Assy

- Adjustment value of PANEL White Barance
  - PANEL-R HIGH : Main unit adjustment item
  - PANEL-G HIGH : Main unit adjustment item
  - PANEL-B HIGH : Main unit adjustment item
  - PANEL-R LOW : Main unit adjustment item
  - PANEL-G LOW : Main unit adjustment item
  - PANEL-B LOW : Main unit adjustment item

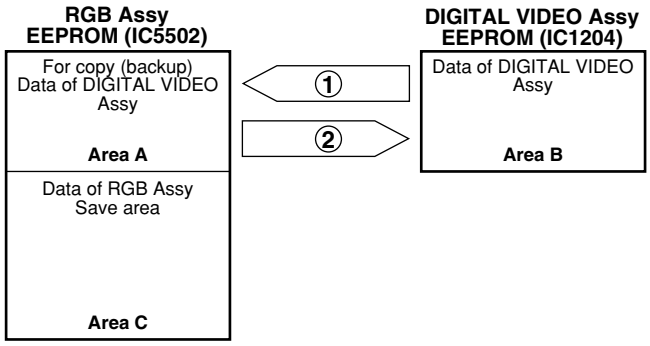
  } Perform automatic data backup
- Adjustment value of ABL
  - ABL LEVEL : Main unit adjustment item

  } Perform automatic data backup
- Adjustment value of drive system
  - X-SUS-B : Main unit adjustment item
  - X-SUS-G : Main unit adjustment item
  - Y-SUS-B : Main unit adjustment item
  - Y-SUS-G : Main unit adjustment item
  - V-SUS : Main unit adjustment item
  - V-OFFSET : Main unit adjustment item

  } Perform automatic data backup
- Pulse meter
- Hour meter
- Setting data of various FULL MASK

■ Flow of basic automatic backup

Use a key word, and judge each data (area A and B) whether it is the adjusted data or the not adjusted data, and perform the copy operation.



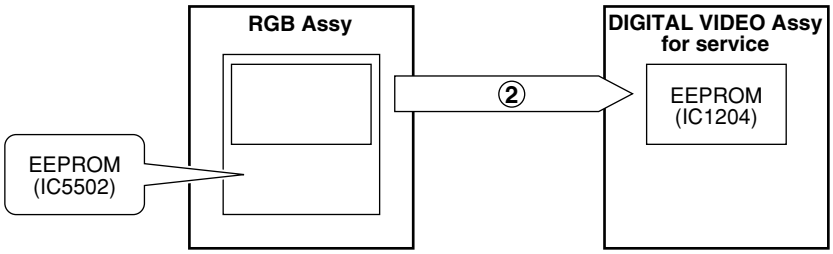
① Perform the copy whenever enter the service factory mode. (There is not relation in a key word.)
② In the power supply ON, confirm a key word, and perform the copy when a key word of DIGITAL VIDEO Assy (area B) does not adjust and a key word of RGB Assy is adjustment complete.

■ Actual automatic backup operation

1. In the DIGITAL VIDEO Assy replacement (Use the service Assy)

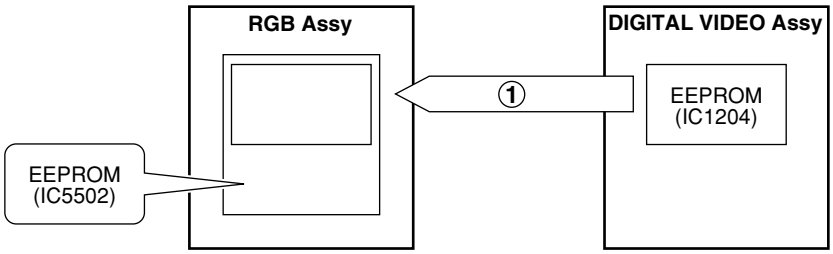
Do not need modification of key words.

Replace DIGITAL VIDEO Assy with DIGITAL VIDEO Assy for service, and auto copies the backup data from EEPROM of RGB Assy to EEPROM of DIGITAL VIDEO Assy by turning the power on.



2. In the RGB Assy replacement (Do not need to be service Assy.)

Replace RGB Assy, and auto copy from EEPROM of DIGITAL VIDEO Assy to EEPROM of RGB Assy as for backup by enter the service factory mode.



3. In the DIGITAL VIDEO Assy replacement (Recycling of a repair part)... When install DIGITAL VIDEO Assy after repair to other sets.

Set a key word of DIGITAL VIDEO Assy to recycle in "Do not adjust".

Enter the service factory mode before removing the DIGITAL VIDEO Assy to recycle, and execute SERVICE PARTS of item INITIALIZE. (However, limit it when work as the main unit and OSD display is possible.)

Readjustment is necessary when cannot execute SERVICE PARTS.

Note: When does not change key word and repairs the DIGITAL VIDEO Assy and installed the DIGITAL VIDEO Assy after repair in another set 2, this function does not work in normal.
In addition, when have entered the service factory mode in the state mentioned above, copy data in the DIGITAL VIDEO Assy of set 1 before repair to area A in the RGB Assy of set 2 to install after repair.
Therefore necessary data have been performed overwrite with set 2.
Cannot replace the data which performed overwriting once.

4. In the DIGITAL VIDEO Assy replacement (Recycling of a repair part)... When install the DIGITAL VIDEO Assy after repair to the former set

Do not need modification of key words.

After repair the DIGITAL VIDEO Assy, work with the main unit adjustment value as before by installing it to the former set.

Perform the same operation as item 1 afterward.

5. When replace the DIGITAL VIDEO Assy and the RGB Assy to another Assy simultaneously

Normal copy with this function does not work. Readjustment is necessary.

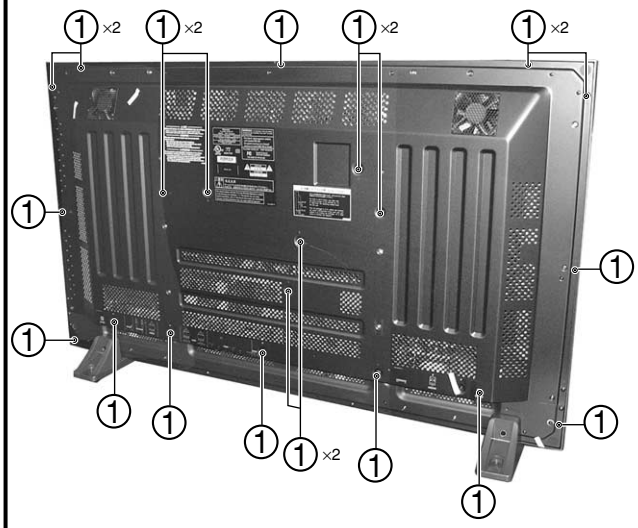
■ Others

1. COLOR and TINT are main unit adjustment items, but does not automatic backup because there are data in area C.
   About these two items
   ① When replaced only the DIGITAL VIDEO Assy
   Readjustment is unnecessary so that data is stored in the RGB Assy.
   ② When replaced the RGB Assy
   Readjustment is necessary after repair.
2. Data in EEPROM of the RGB Assy (area C) are Assy adjustment items except COLOR and TINT.
   Do not need a readjustment when replaced the Service Assy.

7.1.4 DISASSEMBLY

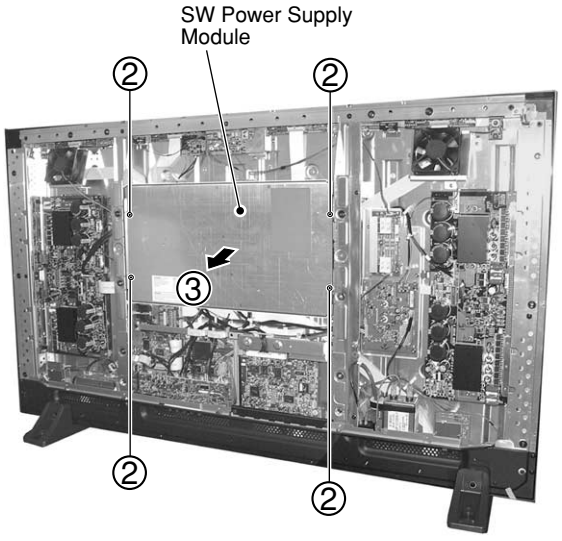
■ SW Power Supply Module

① Remove the Rear Case (50M).(Screws × 20)



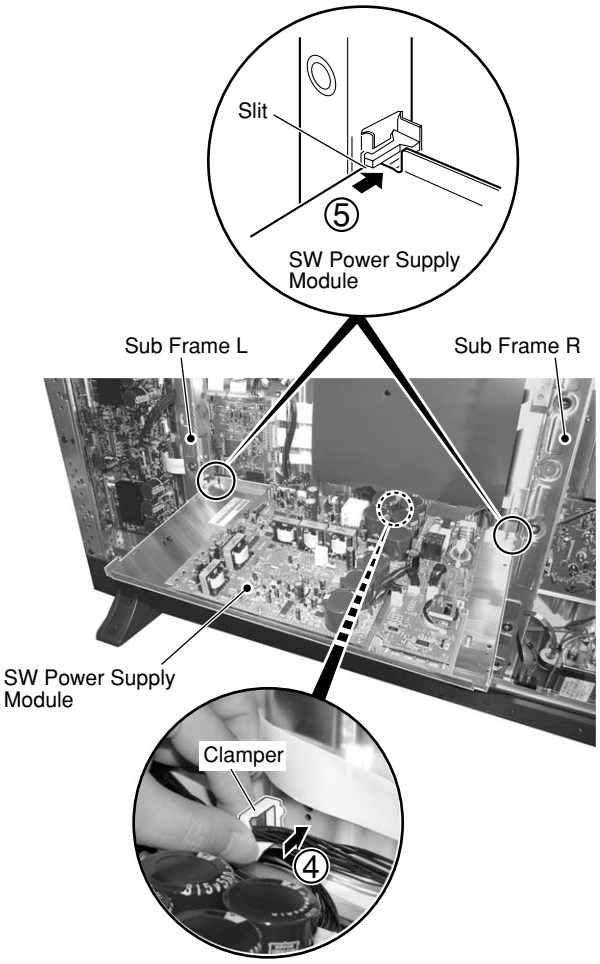
② Remove four screws.

③ Remove the SW Power Supply Module.



④ Insert it and reduce the Clamper.

⑤ Insert the SW Power Supply Module into the slit of Sub Frame L and R.



Diagnosis

■ DIGITAL VIDEO Assy

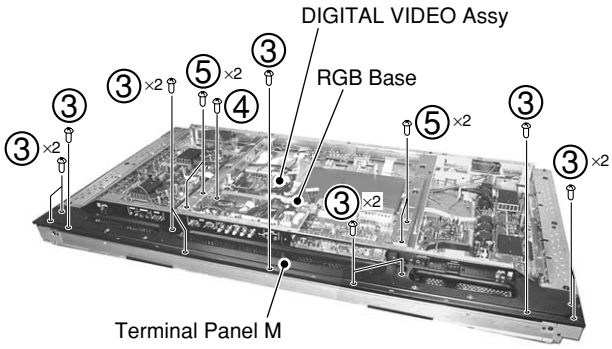
① Remove the Rear Case (50M). (Screws × 20)

② Remove the SW Power Supply Module.
(Connector, Screws × 4)

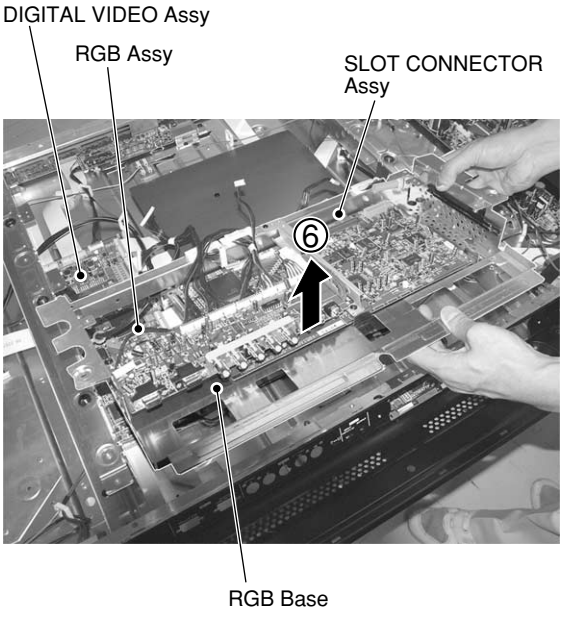
③ Remove the Terminal Panel M. (Screws × 11)

④ Remove a screw of earth block.

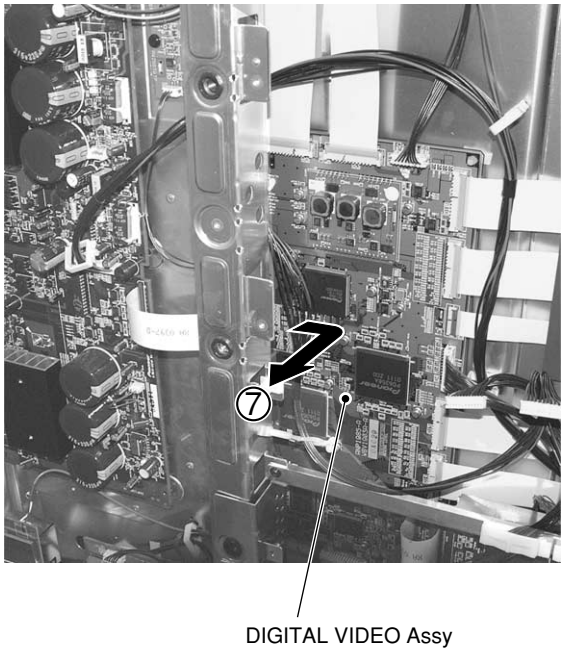
⑤ Remove the RGB Base. (Screws × 4)



⑥ Remove connectors and binders,
and remove the RGB Base with PCB Assys.

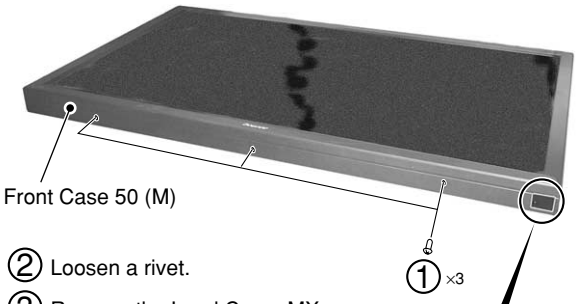


⑦ Remove the DIGITAL VIDEO Assy.
(Connector, Circuit Board Spacer × 6)



Y DRIVE, SCAN (A), (B) Assy

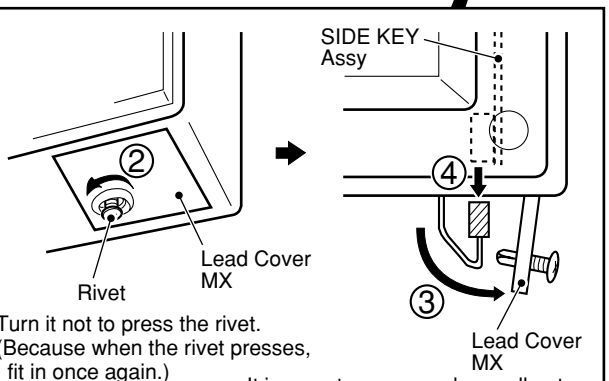
① Remove the three screws.



② Loosen a rivet.

③ Remove the Lead Cover MX.

④ Pull out a Flexible Cable.

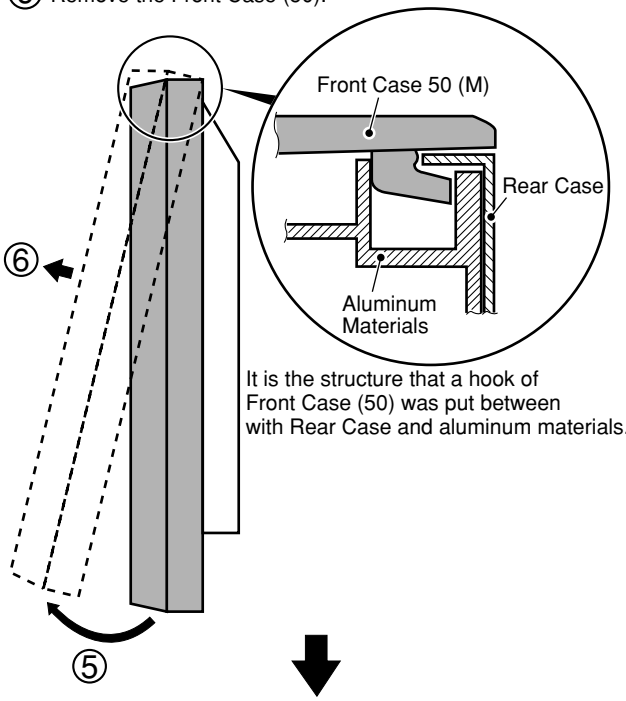


Turn it not to press the rivet.
(Because when the rivet presses, fit in once again.)

It is easy to remove when pull out the Lead Cover MX with the rivet before completely removing the rivet.

⑤ Remove bottom by the fulcrum at the top of Front Case (50).

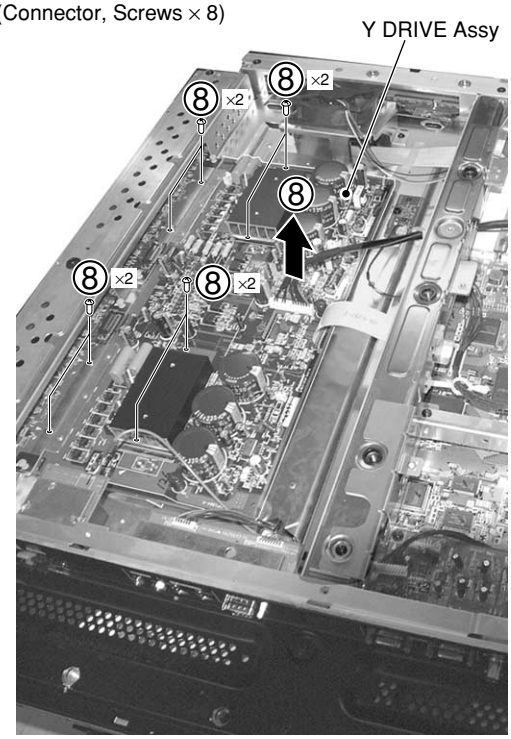
⑥ Remove the Front Case (50).



It is the structure that a hook of Front Case (50) was put between with Rear Case and aluminum materials.

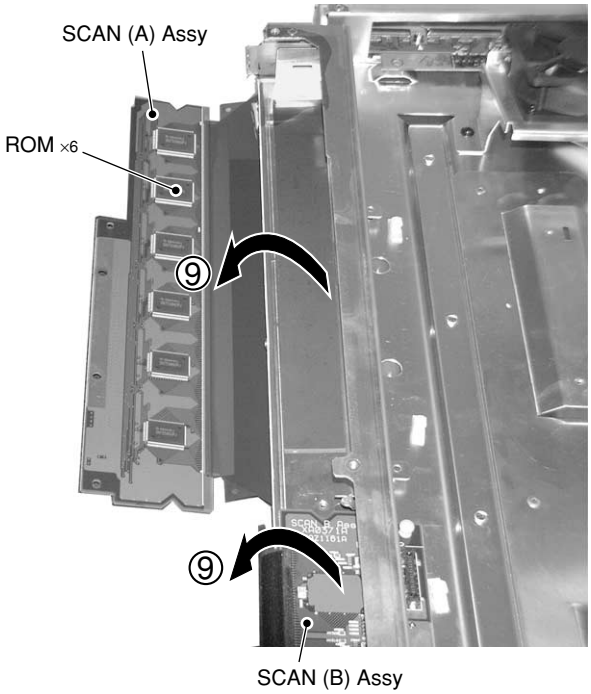
⑦ Remove the Rear Case 50 (M). (Screws × 20)

⑧ Remove the Y DRIVE Assy. (Connector, Screws × 8)



⑨ Reverse the SCAN (A) and SCAN (B) Assemblies.

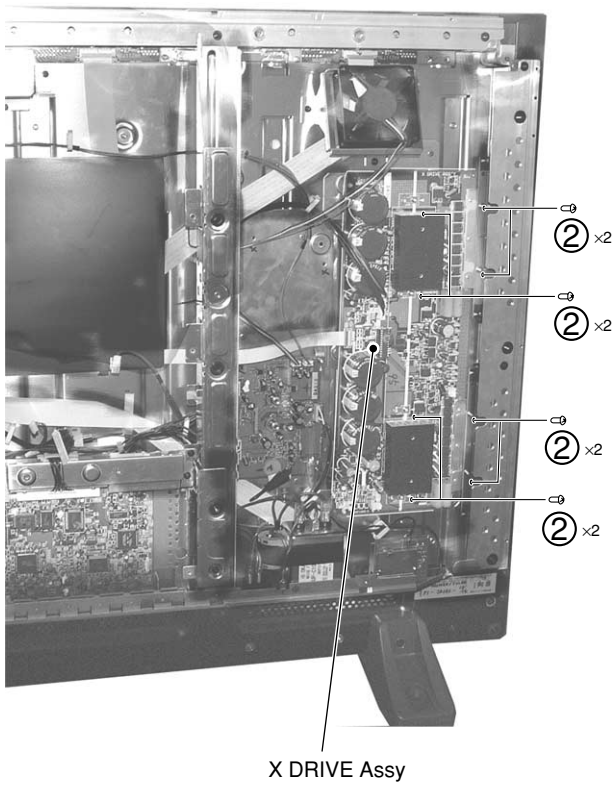
⑩ When it is necessary, exchange the ROM.



X DRIVE Assy

① Remove the Rear Case (50M). (Screws × 20)

② Remove the X DRIVE Assy. (Connector, Screws × 8)

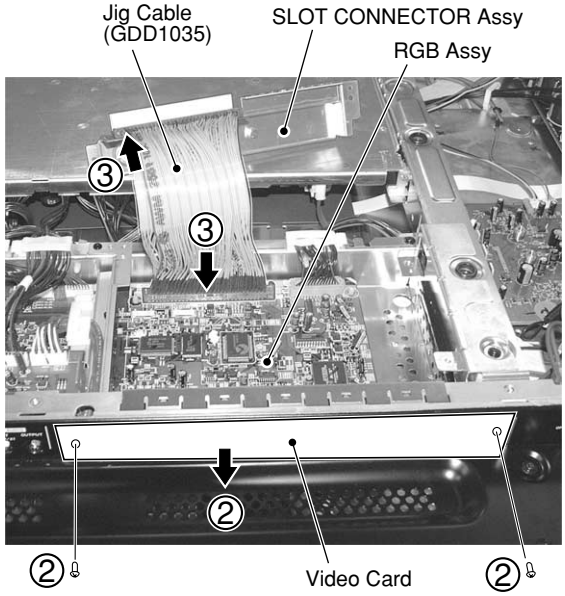


Diagnosis of the Video Card (CMPAV05)

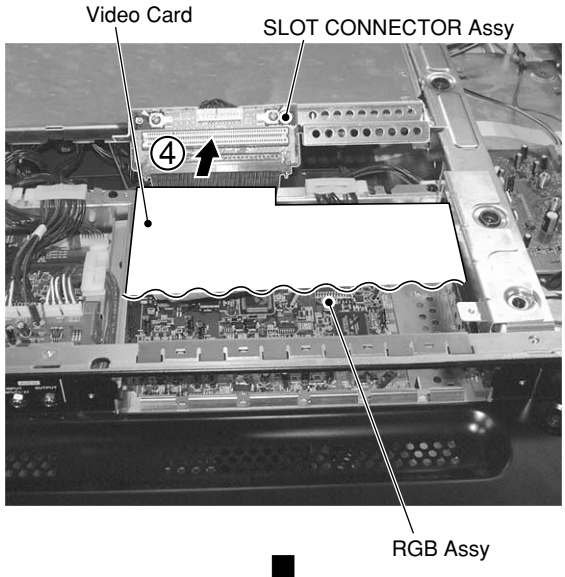
① Remove the Rear Case (50M). (Screws × 20)

② Remove the Video Card. (Screws × 2)

③ Remove the SLOT CONNECTOR Assy from the RGB Assy and reconnect it with the Jig Cable (GDD1035).



④ Reconnect the Video Card.
(Slot does not pass it.)



Diagnosis

7.2 IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

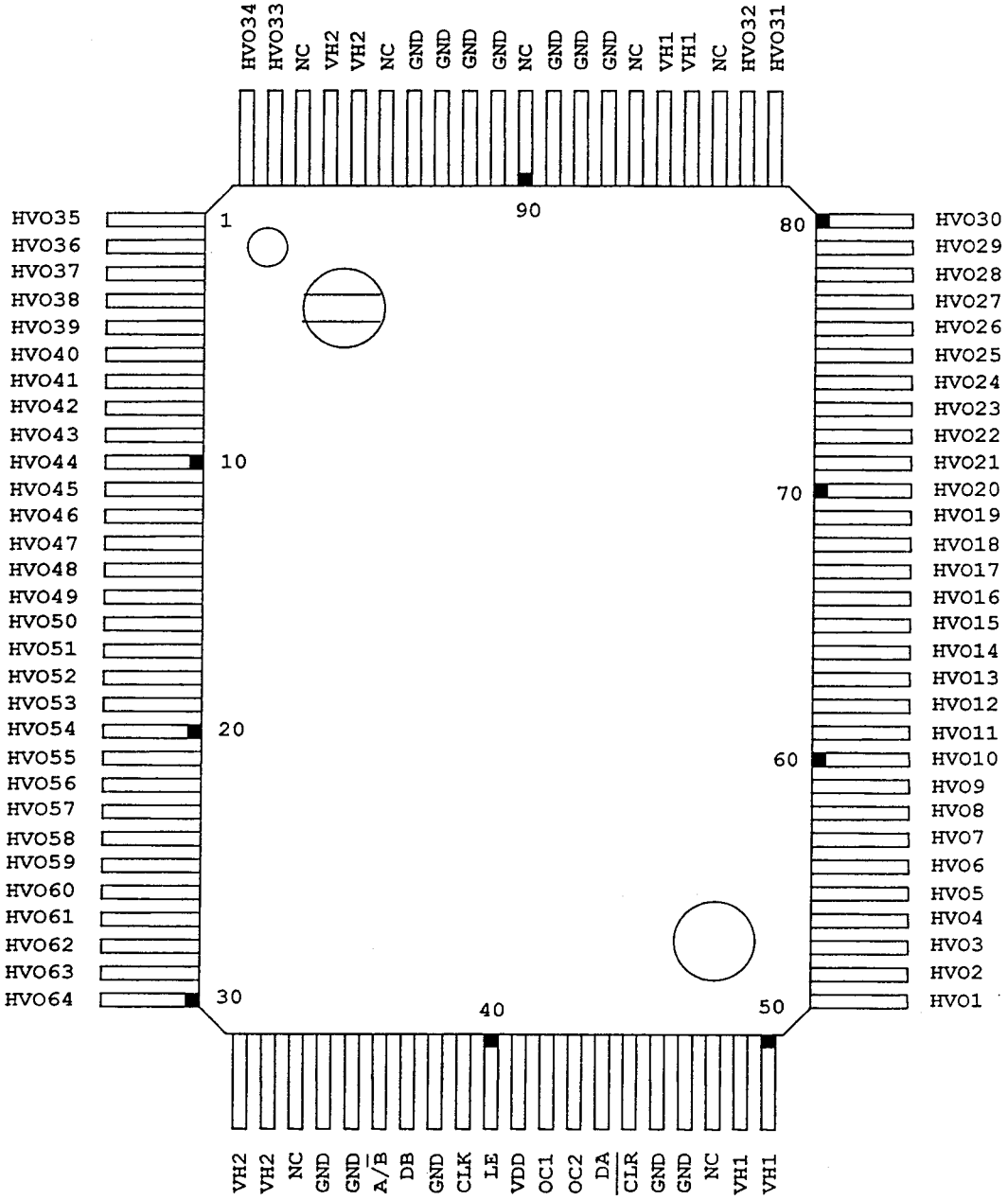
●List of IC

SN755860PJ, M30624FGAFP, HD64F2328VF, GAL22V10, M30624FGAFP, PD6358A, PST9246N, FS781BZB, ML6426CS-1, CXA3516R, BA5417, STK795-460, TFP201A

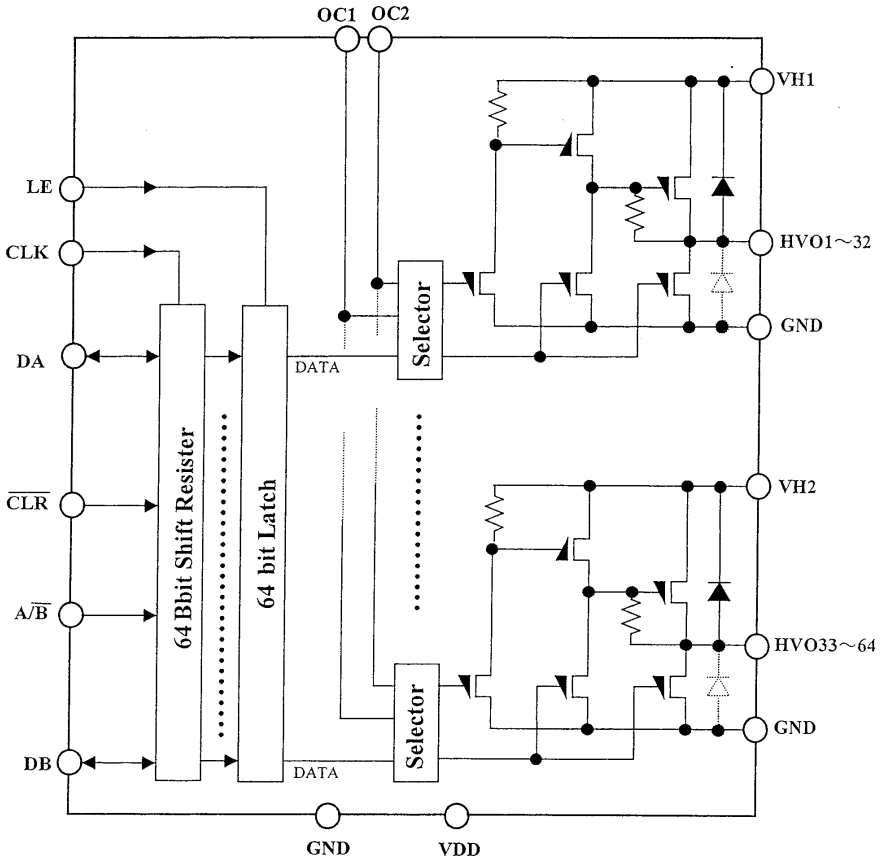
■ SN755860PJ (SCAN A ASSY : IC6201 - IC6206)
SN755860PJ (SCAN B ASSY : IC6001 - IC6006)

• Scan IC

● Pin Assignment (Top view)


HVO34 HVO33 NC VH2 VH2 NC GND GND GND GND NC GND GND GND NC VH1 VH1 NC HVO32 HVO31
HVO35 HVO36 HVO37 HVO38 HVO39 HVO40 HVO41 HVO42 HVO43 HVO44 HVO45 HVO46 HVO47 HVO48 HVO49 HVO50 HVO51 HVO52 HVO53 HVO54 HVO55 HVO56 HVO57 HVO58 HVO59 HVO60 HVO61 HVO62 HVO63 HVO64
1
10
20
30
40
50
60
70
80
90
HVO30 HVO29 HVO28 HVO27 HVO26 HVO25 HVO24 HVO23 HVO22 HVO21 HVO20 HVO19 HVO18 HVO17 HVO16 HVO15 HVO14 HVO13 HVO12 HVO11 HVO10 HVO9 HVO8 HVO7 HVO6 HVO5 HVO4 HVO3 HVO2 HVO1
VH2 VH2 NC GND GND A/B DB GND CLK LE VDD OC1 OC2 DA CLR GND GND NC VH1 VH1

• Block Diagram



• Pin Function

Name	Pin No.	I/O	Num.	Function
CLK	39	I	1	Shift clock (start edge partial response)
DA	44	I/O	1	The serial data input of shifting register
DB	37	I/O	1	The serial data output of shifting register
LE	40	I	1	It output data done a latch of by "L" level.
A/$\overline{B}$	36	I	1	A shift directional control signal of shift register
$\overline{CLR}$	45	I	1	It do data of shift register with "L" by "L" level.
OC1	42	I	1	An output control terminal of HVO
OC2	43	I	1	An output control terminal of HVO
HVO	1-30, 51-82, 99, 100	O	64	High voltage drive output (HV01-HV064)
VDD	41	-	1	Logic power supply
GND	34, 35, 38, 46, 47, 87-89, 91-94	-	12	Standard potential. This is common to HV01-HV064.
VH1	84, 85, 49, 50	-	4	The high potential circuit power supply which is common to HV01-HV032
VH2	31, 32, 96, 97	-	4	The high potential circuit power supply which is common to HV033-HV064
NC	33, 48, 95, 83, 86, 90, 98	-	7	It is the insulation electrically

■ M30624FGAFP (RGB ASSY : IC5505)

• Main Microcomputer

● Pin Function

No.	Pin Name	Function
1	TXD	Serial 3 line data output
2	CLK	Serial 3 line clock
3	FAN	FAN control
4	VOL	Audio VOL control
5	H_SYNC	Horizontal synchronizing signal input for signal distinction
6	V_SYNC	Vertical synchronizing signal input for signal distinction
7	DPMS	SYNC select for power management
8	BYTE	GND
9	CNVSS	Power supply in flash writing, STB +5V
10	NC	Non connection
11	XCONT (Not used)	GND
12	RST	Reset input
13	XOUT	Main clock output
14	VSS	GND
15	XIN	Main clock input
16	VCC	5V standby power
17	Not used	Pull-up
18	REM	Remote control signal input
19	REQ_MD	Communication request from the module microcomputer
20	KEY_SCAN	Key data input
21	WP SW	E2PROM write permission for Plug &Play
22	SLOT_ST2	Inside / outside product distinction of SLOT
23	FUNC1	Outside product SLOT function output 1
24	FUNC2	Outside product SLOT function output 2
25	NC	Non connection
26	NC	
27	NC	
28	NC	
29	SCL	Clock output for IICbus
30	SDA	Data input/output for IICbus
31	TXD1	Data output (flash writing / external equipment communication)
32	RXD1	Data input (flash writing / external equipment communication)
33	CLK1	Clock for flash writing
34	BUSY1	Busy for flash writing
35	TXD0	Data output for communication with the module microcomputer
36	RXD0	Data input for communication with the module microcomputer
37	LED_G	Green LED lighting
38	LED_R	Red LED lighting
39	NC	Non connection
40	IN1DET	INPUT1 input detection
41	EPM	EPM input for flash writing
42	AUDIO_NG	Audio NG detection
43	NC	Non connection
44	NC	
45	OSD_CE	Enable for OSD
46	CE	CE input for flash writing (pull-up)
47	WU_CE	Enable for waide microcomputer
48	FAN_NG	NG detection for fan
49	IN5DET	Video signal input detection
50	CB_MUTE	Combination mute

No.	Pin Name	Function
51	FR_SEL	Output free running in the video signal no input
52	RGB_SEL	Input switch of INPUT1 (Dsub15) / INPUT2 (BNC)
53	POWER	POWER ON/OFF output
54	BUSY	Busy input from the microcomputer
55	BUSY30	Busy input from IC30
56	IN3DET	INPUT3 input detection
57	IN4DET	INPUT4 input detection
58	ACL_SW	Switch the peak ACL function
59	NC	Non connection
60	PNL_MUTE	Panel drive stop
61	NC	Non connection
62	VCC	5V standby power
63	I_DET	I/P distinction signal (extra)
64	VSS	GND
65	NC	Non connection
66	DIN_SEL	Digital input switch trigger (IC102 side)
67	SDIN_SEL	Digital input switch trigger (DVI input side)
68	FWE	Enable for flash writing of the wide microcomputer
69	MD2	Mode setting for flash writing of the wide microcomputer
70	RST_WU	Reset the wide microcomputer
71	WE_WU	Flash writing permission output for wide microcomputer
72	WE_MD	Flash writing permission output for module
73	NC	Non connection
74	REQ_WU	Communication request from the wide microcomputer
75	RST2	Reset detection of wide microcomputer system 3.3V power supply
76	EXT_INT	Input signal switch
77	A_MUTE1	Audio mute 1
78	A_MUTE2	Audio mute 2
79	H_POL	H.SYNC polarity distinction
80	V_POL	V.SYNC polarity distinction
81	(E)SCL	I2C-BUS clock of E2PROM exclusive use
82	(E)SDA	I2C-BUS data of E2PROM exclusive use
83	EEPRST	E2PROM reset
84	FIX_VAR	AUDIO output signal switch (fixing, variable)
85	SYNC_ST	Presence distinction input of SYNC
86	NC	Non connection
87	NC	
88	SIGRST	Trigger for synchronous processing time shortening
89	NC	Non connection
90	PLD_CE	Enable for SYNC control PLD
91	NC	Non connection
92	NC	
93	SLOT_ST	A/D input for model distinction
94	TEMP3	A/D input for temperature sensor 3
95	TEMP2	A/D input for temperature sensor 2
96	AVSS	GND for AD conversion (GND connection)
97	PM_ST	Pull-up
98	VREF	AD conversion reference voltage
99	AVCC	Power supply for AD conversion
100	RXD	Serial 3 line data input

■ HD64F2328VF (RGB ASSY : IC5601)

• Wide Microcomputer

●Pin Function

No.	Pin Name	Function
1	NC	Non connection
2	Not used	PU
3	VSS	GND
4	NC	Non connection
5	VCC	3.3V power supply
6	UA0	Address bus 0 with each IC
7	UA1	Address bus
8	UA2	
9	UA3	
10	VSS	GND
11	UA4	Address bus
12	UA5	
13	UA6	
14	UA7	
15	UA8	
16	UA9	
17	UA10	
18	UA11	
19	VSS	GND
20	UA12	Address bus
21	UA13	
22	UA14	
23	UA15	
24	UA16	Address bus for external flash memory
25	UA17	
26	UA18	
27	UA19	
28	VSS	GND
29	WU_CE	Main microcomputer communication enable
30	NC	Non connection
31	VI	Vertical synchronization interrupt input
32	VACT_FRC	Vact interrupt input after frame rate conversion
33	DE_W	DE interrupt for start line detection of panel link input V
34	VD_W	Vertical synchronization interrupts before FRC
35	VSS	GND
36	VSS	
37	VACT_IP	Histogram acquisition interrupt input
38	FILM_IP	Acquisition interrupt input of film information
39	VCC	3.3V power supply
40	UD0	Data bus
41	UD1	
42	UD2	
43	UD3	
44	VSS	GND
45	UD4	Data bus

No.	Pin Name	Function
46	UD5	Data bus
47	UD6	
48	UD7	
49	UD8	
50	UD9	
51	UD10	
52	UD11	
53	VSS	GND
54	UD12	Data bus
55	UD13	
56	UD14	
57	UD15	
58	VCC	3.3V power supply
59	D_TXD	Communication data output to the main unit microcomputer
60	EXT_TXD	232C communication output to the external personal computer (FLASH2)
61	D_RXD	Communication data input from the main unit microcomputer
62	EXT_RXD	232C communication input from the external personal computer (FLASH2)
63	D_CLK	Communication clock input from the main unit microcomputer
64	D_BUSY	BUSY for the main unit microcomputer
65	VSS	GND
66	CS_30	Chip select output for IC30
67	VSS	GND
68	VSS	
69	CS_FLASH	Chip select output for 16M flash
70	A19_FLASH	Control output of 16M flash address A19
71	REQ_WU	Request for the main unit microcomputer
72	CE_W	DE for start line detection of panel link input V
73	VD_W	Vertical synchronization before FRC
74	NC	Non connection
75	NC	
76	NC	
77	NC	
78	NC	
79	SGLB_AD	Switching output of a clock and 1/2 clock
80	FWE	Writing enable signal input for built-in flash memory
81	RESET	Reset input from the main unit microcomputer and reset IC
82	Not used	Pull-up
83	Not used	
84	VCC	3.3V power supply
85	XTAL	Connect a ceramic resonator (25MHz)
86	EXTAL	
87	VCC	3.3V power supply
88	PHAI	System clock output
89	VCC	3.3V power supply
90	SGLB_IP	Single input selecting output of IC102

No.	Pin Name	Function
91	RDB	Reading of external address space
92	HWRB	Upper rank data (D15 to D8) writing of external address space
93	PLL_CE	Chip enable signal output for AD/PLL
94	WAIT_IP	WAIT input for IC102
95	NC	Non connection
96	NC	
97	TXD_WU	Communication data output (AD/PLL)
98	NC	Non connection
99	VSS	GND
100	VSS	
101	SCK_WU	Communication clock input/output (AD/PLL)
102	WAIT_FLASH	WAIT input for external flash memory
103	AVCC	3.3V power supply
104	VREF	A/D and D/A reference voltage input
105	ULK_PLL	PLL unlock signal input
106	EXT_FILM	External film signal input
107	Not used	Pull-up
108	Not used	
109	ACL_PC	ACL input for PC (A/D input)
110	Not used	Pull-up
111	INa_30	NC
112	INb_30	
113	AVSS	GND
114	VSS	
115	NC	Non connection
116	NC	
117	HD_W	Horizontal sync. signal
118	FI	FILM mode detecting input
119	HI	Horizontal sync. count input
120	FDET_IP	System frequency detecting input
121	EMG_IP	IC102 forced hardware through output
122	IP_KILL	IC101 forced stop output
123	MD0	Wide microcomputer operation mode (mode 6 fixing) (0)
124	MD1	Wide microcomputer operation mode (mode 6 fixing) (1)
125	MD2	Wide microcomputer operation mode (mode 6 fixing) (2)
126	IC_RST	Reset signal input for ASIC
127	CS_102	Chip select output for IC102
128	CS_101	Chip select output for IC101

■ HD64F2328VF (DIGITAL VIDEO ASSY : IC1101)

• Panel Microcomputer

● Pin Function

No.	Pin Name	Function
1	CS_23	PE5064 (IC 1703) control output
2	NC	NC terminal
3	VSS	GND
4	VSS	GND
5	VCC	3.3V power supply
6	UA0	Address bus
7	UA1	Address bus
8	UA2	Address bus
9	UA3	Address bus
10	VSS	Address bus
11	UA4	Address bus
12	UA5	Address bus
13	UA6	Address bus
14	UA7	Address bus
15	UA8	Address bus
16	UA9	Address bus
17	UA10	Address bus
18	UA11	Address bus
19	VSS	GND
20	UA12	Address bus
21	UA13	Address bus
22	UA14	Address bus
23	UA15	Address bus
24	UA16	Address bus
25	UA17	Address bus
26	UA18	Address bus
27	UA19	Address bus
28	VSS	GND
29	UA20	Address bus
30	PA5	NC terminal
31	PA6	NC terminal
32	PA7	NC terminal
33	CE_PN	Enables/ for panel microcomputer
34	CE_PN	Enables/ for panel microcomputer
35	VSS	GND
36	VSS	GND
37	APLP	The APL value acquisition trigger signal input.
38	VD_31	The V signal input from IC 1401 (PD 6358).
39	VCC	3.3V power supply
40	UD0	Data bus
41	UD1	Data bus
42	UD2	Data bus
43	UD3	Data bus
44	VSS	GND
45	UD4	Data bus
46	UD5	Data bus
47	UD6	Data bus
48	UD7	Data bus
49	UD8	Data bus
50	UD9	Data bus

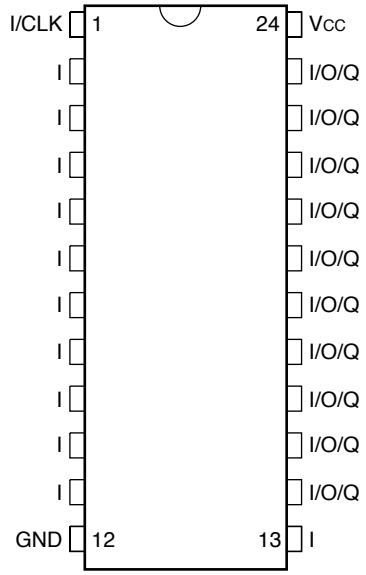
No.	Pin Name	Function
51	UD10	Data bus
52	UD11	Data bus
53	VSS	GND
54	UD12	Data bus
55	UD13	Data bus
56	UD14	Data bus
57	UD15	Data bus
58	VCC	3.3V power supply
59	D_TXD	Communication with IC 1207 (a module microcomputer).
60	EXT_TXD	Communication with the outside (program notes).
61	D_RXD	Communication with IC 1207 (a module microcomputer).
62	EXT_RXD	Communication with the outside (program notes).
63	D_CLK	Communication with IC 1207 (a module microcomputer).
64	P60	NC terminal
65	VSS	GND
66	CS_FLASH	A flash memory control terminal
67	VSS	GND
68	VSS	GND
69	P61	NC terminal
70	UDREQ	IC 1703 (PE5064) control terminal
71	P63	NC terminal
72	WE_FLASH	A flash memory note control signal (unused).
73	BUSY	The command receipt of a message lye Norwich output
74	REQ_PU	A communication demand to a module microcomputer.
75	SEL23B	IC 1703 (PE5064) control terminal
76	CLRB	IC 1703 (PE5064) control terminal
77	FR_SEL	The free LAN select signal output
78	RST31B	The reset output to IC1301, IC1401(PD6358)
79	RST23B	The reset output to IC 1703 (PE5064)
80	FWE	Microcomputer program note control signal
81	RESET	Reset input
82	NMI	The at the rate of tang input (unuse)
83	STBY	The hardware standby input (unused)
84	VCC	3.3V power supply
85	XTAL	A clock oscillation child connection terminal
86	EXTAL	A clock oscillation child connection terminal
87	VSS	GND
88	PF7	NC terminal
89	VCC	3.3V power supply
90	PF6	NC terminal
91	RDB	A read control terminal from an outside slave device
92	HWRB	A wright control terminal to an outside slave device
93	PF3	NC terminal
94	PF2	NC terminal
95	PF1	NC terminal
96	PF0	NC terminal
97	P50	NC terminal
98	P51	NC terminal
99	VSS	GND
100	VSS	GND

No.	Pin Name	Function
101	P52	NC terminal
102	P53	NC terminal
103	AVCC	3.3V power supply
104	VREF	A/D, D/A reference voltage input (unused)
105	STOPB	The drive control input from IC 1703 (PE5064)
106	P41	NC terminal
107	RYBY	The flash memory note ready input
108	ADR_K_EMG_L1	The emergency input from panel bottom address resonance block.
109	ADR_K_EMG_U1	The emergency input from panel upper part address resonance block
110	ADR_K_EMG_L2	The emergency input from panel bottom address resonance block. (unused)
111	ADR_K_EMG_U2	The emergency input from panel upper part address resonance block(unused)
112	P47	NC terminal
113	AVSS	GND
114	VSS	GND
115	MUTE_ADR	The panel mute signal output
116	MUTE_SUS	The XY drive mute signal output (unused)
117	P15	NC terminal
118	HD	The HD signal input from outside ASSY (RGB ASSY, etc)
119	P13	NC terminal
120	P12	NC terminal
121	PC_VIDEO	The PC/Video identification output
122	VD	The VD signal input from outside ASSY (RGB ASSY, etc)
123	MD0	The microcomputer mode of operation select signal input
124	MD1	The microcomputer mode of operation select signal input
125	MD2	The microcomputer mode of operation select signal input
126	PG0	NC terminal
127	CS_31Y	IC1301, IC1401(PD 6358) control terminal
128	CS_31X	IC1301, IC1401(PD 6358) control terminal

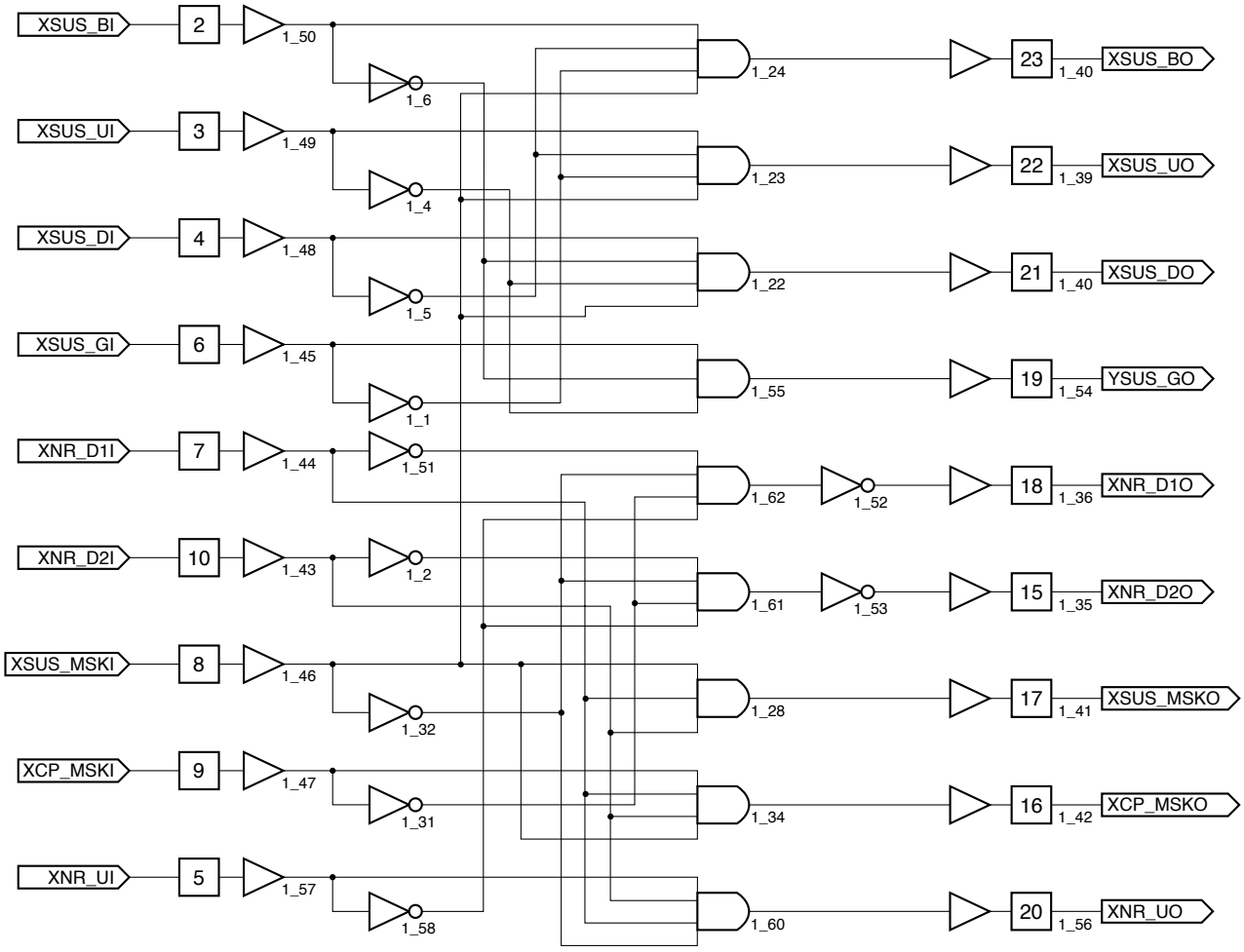
■ GAL22V10 (X DRIVE ASSY : IC2006)

• **Drive Protect PLD**

Pin Assignment (Top View)



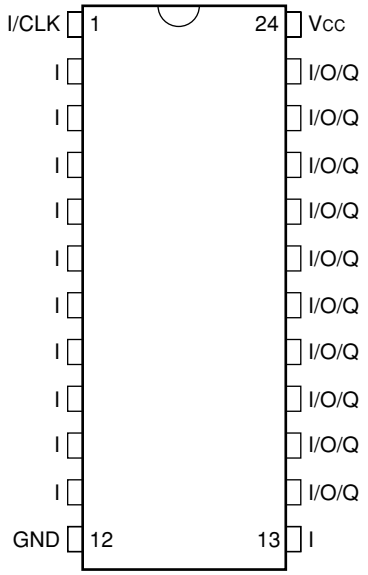
Block Diagram



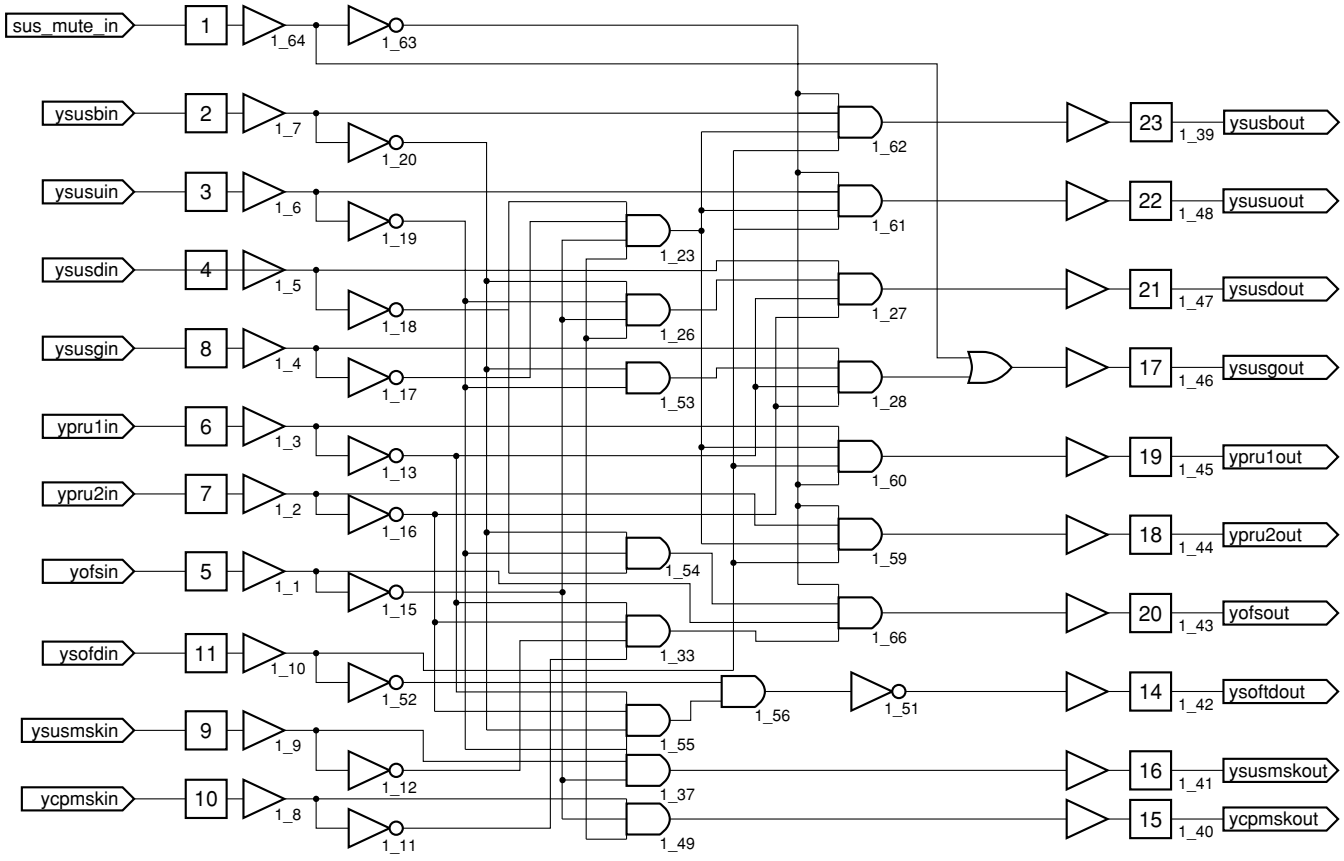
■ GAL22V10 (Y DRIVE ASSY : IC3003)

• Drive Protect PLD

● Pin Assignment (Top View)



● Block Diagram



■ M30624FGAFP (DIGITAL VIDEO ASSY : IC1207)

• Module Microcomputer

● Pin Function

No.	Pin Name	Function
1	TXD	Serial 3 line data output for communication with a panel microcomputer
2	CLK	Serial 3 line clock for communication with a panel microcomputer
3	NC	NC terminal
4	NC	NC terminal
5	NC	NC terminal
6	NC	NC terminal
7	NC	NC terminal
8	BYTE	The external data bus width reshuffling input (I am unused and connect GND)
9	CNVSS	A power supply for program note (a note, 5V, usually, pull-down
10	XCIN	NC terminal
11	XCOUT	NC terminal
12	RESET	A reset input terminal
13	XOUT	Clock output terminal
14	VSS	GND
15	XIN	Clock input terminal
16	VCC	5V standby power
17	NMI	Because a NMI interruption terminal is unused, It handle pull up.
18	REM	The SR signal input
19	REQ_PU	A communication demand from a panel microcomputer (the pulse meter acquisition)
20	/SW_TRG	Main switch OFF / ON search
21	NC	NC terminal
22	NC	NC terminal
23	NC	NC terminal
24	AC_OFF	AC power OFF search and power supply ASSY differentiation.
25	PD_TRIGGER	Power down search
26	NC	NC terminal
27	NC	NC terminal
28	NC	NC terminal
29	SCL	EEPROM, IIC communication with power supply ASSY
30	SDA	EEPROM, IIC communication with power supply ASSY
31	TXD1	Communication with the outside (a program note)
32	RXD1	Communication with the outside (a program note)
33	CLK1	Communication with the outside (a program note)
34	BUSY1	Communication with the outside (a program note)
35	TXD0	Communication with outside ASSY (microcomputers main in RGB ASSY, etc)
36	RXD0	Communication with outside ASSY (microcomputers main in RGB ASSY, etc)
37	NC	NC terminal
38	REQ_MD/A_MUTE	232C communication demand (a request to a main microcomputer) / audio system mute
39	NC	NC terminal
40	NC	NC terminal
41	EPM	The EPM input for program note (L fixation)
42	NC	NC terminal
43	PU_CE	Enables/ for panel microcomputer
44	NC	NC terminal
45	MOD_SW/A_NG	The model of machines distinction input / audio system NG input
46	CE	The CE input for program note (H fixation)
47	DITHER/SW_STC	Power supply search of a dither setting / media receiver for module
48	NC	NC terminal
49	/SW_STP	Power supply search of a panel
50	NC	NC terminal

No.	Pin Name	Function
51	NC	NC terminal
52	RELAY	The output for power supply ON / OFF change
53	POWER/MSTATE	Input / SII861 master information for power supply ON / OFF change
54	NC	NC terminal
55	WE_PN	Buffer state control for panel microcomputer note
56	MD0	The panel microcomputer mode of operation change output
57	MD2	The panel microcomputer mode of operation change output
58	FWE	The panel microcomputer program note control signal output
59	RST_PU	The panel microcomputer reset output
60	PN_MUTE	The panel mute input
61	NC	NC terminal
62	VCC	5V standby power
63	NC	NC terminal
64	VSS	GND
65	NC	NC terminal
66	NC	NC terminal
67	/A_SCL	IIC clock for audio system
68	/A_SDA	IIC data for audio system
69	APD_MUTE	A mute signal of address series
70	ADR_K_PD	The address oscillatory system PD input
71	ADR_PD	The address series PD input
72	DCC_PD	The power supply system PD input
73	NC	NC terminal
74	NC	NC terminal
75	RST2	Panel microcomputer reset search
76	NC	NC terminal
77	/DDC_SCL	IIC communication with a media receiver
78	/DDC_SDA	IIC communication with a media receiver
79	NC	NC terminal
80	NC	NC terminal
81	DEW_DET	The dew condensation sensor input
82	NC	NC terminal
83	NC	NC terminal
84	NC	NC terminal
85	NC	NC terminal
86	LED_G	Green LED lighting (LED on interface ASSY in a panel module)
87	LED_R	Red LED lighting (LED on interface ASSY in a panel module)
88	NC	NC terminal
89	BUSY	Communication permission / inhibiting signal from a panel microcomputer
90	NC	NC terminal
91	NC	NC terminal
92	/F_KEY1	The front KEY input
93	MAX_PLS2/F_KEY2	The terminal / front KEY input for brightness setting mode of operation change
94	TEMP1	The A/D input for temperature sensor
95	MAX_PLS? /CCKM	Terminal / connection search for brightness setting mode of operation change
96	AVSS	GND for AD conversion
97	PM_ST	The A/D input for model of machines distinction
98	VREF	Reference voltage for AD conversion
99	AVCC	5V standby power for AD conversion
100	RXD	Serial 3 line data entry for communication with a panel microcomputer

■ PD6358A (DIGITAL VIDEO ASSY : IC1301)

• Picture Improved IC

● Pin Function

No.	Pin Name	Function
1	VSS	GND
2	TESTO6	Test output terminal (unused)
3	OSDCLK	The CLK input for OSD
4	TTST	Test input terminal (unused)
5	VDDI	2.5V power supply
6	OVDDE-01	3.3V power supply
7	AGO0	Address data output (G signal)
8	VDDI	2.5V power supply
9	AGO2	Address data output (G signal)
10	AGO3	Address data output (G signal)
11	AGO4	Address data output (G signal)
12	VDDI	2.5V power supply
13	ARO6	Address data output (R signal)
14	AGO7	Address data output (G signal)
15	VDDI	2.5V power supply
16	ARO9	Address data output (R signal)
17	ABO9	Address data output (B signal)
18	VDDI	2.5V power supply
19	ADRCLKO2	The address CLK output (for panel upper part)
20	ARO12	Address data output (R signal)
21	ARO13	Address data output (R signal)
22	AGO14	Address data output (G signal)
23	AGO15	Address data output (G signal)
24	ARO16	Address data output (R signal)
25	ARO17	Address data output (R signal)
26	VSS	GND
27	ABO17	Address data output (B signal)
28	AGO17	Address data output (G signal)
29	AGO18	Address data output (G signal)
30	ABO19	Address data output (B signal)
31	UDAT15	Microcomputer data bus
32	UDAT12	Microcomputer data bus
33	UDAT9	Microcomputer data bus
34	UDAT5	Microcomputer data bus
35	OVDDE-06	3.3V power supply
36	APLP	APL value output trigger signal
37	OVDDE-08	3.3V power supply
38	CS5BI	The chip select input
39	CS4BI	The chip select input
40	UADRI13	Microcomputer address bus
41	UADRI9	Microcomputer address bus
42	UADRI6	Microcomputer address bus
43	UADRI2	Microcomputer address bus
44	UADRI1	Microcomputer address bus
45	TESTI2	Test input terminal (unused)
46	BIT0	The subfield No output (the 0 bit)
47	OVDDE-11	3.3V power supply
48	TESTO4	Test output terminal (unused)
49	ARO39	Address data output (G signal)
50	AGO38	Address data output (G signal)

No.	Pin Name	Function
51	VSS	GND
52	ABO37	Address data output (B signal)
53	ABO36	Address data output (B signal)
54	ARO36	Address data output (R signal)
55	ABO34	Address data output (B signal)
56	ADRCLKO4	The address CLK output (for panel bottom part)
57	AGO33	Address data output (G signal)
58	AGO32	Address data output (G signal)
59	AGO31	Address data output (G signal)
60	AGO30	Address data output (G signal)
61	AGO29	Address data output (G signal)
62	VDDI	2.5V power supply
63	ABO27	Address data output (B signal)
64	AGO26	Address data output (G signal)
65	VDDI	2.5V power supply
66	AGO24	Address data output (G signal)
67	VDDI	2.5V power supply
68	ABO22	Address data output (B signal)
69	VDDI	2.5V power supply
70	ARO21	Address data output (R signal)
71	ARO20	Address data output (R signal)
72	VDDI	2.5V power supply
73	OVDDE-14	3.3V power supply
74	TDI	The JTAG input
75	RBI9	The R picture B aspect signal input (the ninth bit)
76	VSS	GND
77	RBI8	The R picture B aspect signal input (the eighth bit)
78	RBI6	The R picture B aspect signal input (the sixth bit)
79	RBI4	The R picture B aspect signal input (the fourth bit)
80	OVSS-09	GND
81	RSTB	Reset input
82	GBI8	The G picture B aspect signal input (the eighth bit)
83	OVDDE-18	3.3V power supply
84	GBI5	The G picture B aspect signal input (the fifth bit)
85	GBI2	The G picture B aspect signal input (the second bit)
86	DEI	DE signal input
87	BBI6	The B picture B aspect signal input (the sixth bit)
88	BBI3	The B picture B aspect signal input (the third bit)
89	VDI	VD signal input
90	HDI	HD signal input
91	RAI6	The R picture A aspect signal input (the sixth bit)
92	RAI2	The R picture A aspect signal input (the second bit)
93	TESTI0	Test input terminal (unused)
94	OVSS-11	GND
95	GAI7	The G picture A aspect signal input (the seventh bit
96	GAI3	The G picture A aspect signal input (the third bit)
97	GAI0	The G picture A aspect signal input (the 0 bit)
98	BAI6	The B picture A aspect signal input (the sixth bit)
99	BAI3	The B picture A aspect signal input (the third bit)
100	BAI0	The B picture A aspect signal input (the 0 bit)

No.	Pin Name	Function
101	TESTO7	Test output terminal (unused)
102	TESTO5	Test output terminal (unused)
103	OSDH	OSDH input
104	BLK	OSDBLK input
105	OSDB	OSDB signal input
106	NC	NC terminal
107	ARO1	Address data output (R signal)
108	ARO2	Address data output (R signal)
109	ARO3	Address data output (R signal)
110	ARO4	Address data output (R signal)
111	ARO5	Address data output (R signal)
112	ABO5	Address data output (B signal)
113	ARO7	Address data output (R signal)
114	ARO8	Address data output (R signal)
115	ABO8	Address data output (B signal)
116	AGO9	Address data output (G signal)
117	AGO10	Address data output (G signal)
118	ADRCLKO1	Address CLK output (for panel upper part)
119	ABO11	Address data output (B signal)
120	ABO12	Address data output (B signal)
121	ARO14	Address data output (R signal)
122	ARO15	Address data output (R signal)
123	ABO15	Address data output (B signal)
124	ABO16	Address data output (B signal)
125	AGO16	Address data output (G signal)
126	ARO18	Address data output (R signal)
127	AGO19	Address data output (G signal)
128	OVDDE-05	3.3V power supply
129	UDAT13	Microcomputer data bus
130	UDAT10	Microcomputer data bus
131	UDAT6	Microcomputer data bus
132	UDAT3	Microcomputer data bus
133	UDAT0	Microcomputer data bus
134	OVDDE-07	3.3V power supply
135	LR	The panel LR select input
136	RDBI	Microcomputer read control terminal
137	CLKSEL	CLK select input
138	UADRI10	Microcomputer address bus
139	UADRI7	Microcomputer address bus
140	UADRI3	Microcomputer address bus
141	CYCLEB	Address data output control signal
142	BIT2	Subfield No. output (the second bit)
143	SFSTB	Address data output control signal
144	OVSS-05	GND
145	TESTO2	Test output terminal (unused)
146	ABO38	Address data output (B signal)
147	ARO38	Address data output (R signal)
148	ARO37	Address data output (R signal)
149	AGO36	Address data output (G signal)
150	ARO35	Address data output (R signal)

No.	Pin Name	Function
151	ADRCLKO3	The address CLK output (for panel bottom part)
152	ABO33	Address data output (B signal)
153	ABO32	Address data output (B signal)
154	VDDI	2.5V power supply
155	ABO30	Address data output (B signal)
156	VDDI	2.5V power supply
157	ABO28	Address data output (B signal)
158	ARO28	Address data output (R signal)
159	ABO26	Address data output (B signal)
160	ABO25	Address data output (B signal)
161	ABO24	Address data output (B signal)
162	ARO24	Address data output (R signal)
163	ARO23	Address data output (R signal)
164	ARO22	Address data output (R signal)
165	AGO21	Address data output (G signal)
166	AGO20	Address data output (G signal)
167	TDO	JTAG signal
168	TMS	JTAG signal
169	RBI7	The R picture B aspect signal input (the seventh bit)
170	TCK	JTAG signal
171	RBI5	The R picture B aspect signal input (the fifth bit)
172	RBI3	The R picture B aspect signal input (the third bit)
173	RBI1	The R picture B aspect signal input (the first bit)
174	OVDDE-16	3.3V power supply
175	GBI7	The G picture B aspect signal input (the seventh bit)
176	OVSS-10	GND
177	GBI4	The G picture B aspect signal input (the fourth bit)
178	GBI1	The G picture B aspect signal input (the first bit)
179	BBI9	The B picture B aspect signal input (the ninth bit)
180	BBI5	The B picture B aspect signal input (the fifth bit)
181	BBI2	The B picture B aspect signal input (the second bit)
182	RAI9	The R picture A aspect signal input (the ninth bit)
183	CLK3	CLK input terminal (unused)
184	RAI5	The R picture A aspect signal input (the fifth bit)
185	RAI1	The R picture A aspect signal input (the first bit)
186	TESTI1	Test input terminal (unused)
187	GAI9	The G picture A aspect signal input (the ninth bit)
188	GAI6	The G picture A aspect signal input (the sixth bit)
189	GAI2	The G picture A aspect signal input (the second bit)
190	BAI9	The B picture A aspect signal input (the ninth bit)
191	BAI5	The B picture A aspect signal input (the fifth bit)
192	BAI2	The B picture A aspect signal input (the second bit)
193	BAI1	The B picture A aspect signal input (the first bit)
194	OVSS-01	GND
195	OVSS-02	GND
196	OSDG	OSDG signal input
197	ARO0	Address data output (R signal)
198	ABO0	Address data output (B signal)
199	ABO1	Address data output (B signal)
200	ABO2	Address data output (B signal)

No.	Pin Name	Function
201	ABO3	Address data output (B signal)
202	ABO4	Address data output (B signal)
203	OVDDE-02	3.3V power supply
204	ABO6	Address data output (B signal)
205	ABO7	Address data output (B signal)
206	VDDI	2.5V power supply
207	OVDDE-03	3.3V power supply
208	ARO10	Address data output (R signal)
209	ABO10	Address data output (B signal)
210	AGO11	Address data output (G signal)
211	AGO12	Address data output (G signal)
212	ABO13	Address data output (B signal)
213	ABO14	Address data output (B signal)
214	OVDDE-04	3.3V power supply
215	OVSS-03	GND
216	ARO19	Address data output (R signal)
217	TESTO1	Test output terminal (unused)
218	UDAT14	Microcomputer data bus
219	UDAT11	Microcomputer data bus
220	UDAT7	Microcomputer data bus
221	UDAT4	Microcomputer data bus
222	UDAT1	Microcomputer data bus
223	VDRD	V signal output
224	HWRBI	Microcomputer wright control terminal
225	UADRI14	Microcomputer address bus
226	OVDDE-09	3.3V power supply
227	UADRI11	Microcomputer address bus
228	UADRI8	Microcomputer address bus
229	UADRI4	Microcomputer address bus
230	BIT3	Subfield No. output (the third bit)
231	BIT1	Subfield No. output (the first bit)
232	OVDDE-10	3.3V power supply
233	TESTO3	Test output terminal (unused)
234	ABO39	Address data output (B signal)
235	AGO37	Address data output (G signal)
236	OVSS-06	GND
237	AGO35	Address data output (G signal)
238	ADRCLKO5	Address CLK output (for panel bottom part)
239	ARO34	Address data output (R signal)
240	ARO33	Address data output (R signal)
241	ABO31	Address data output (B signal)
242	ARO31	Address data output (R signal)
243	ABO29	Address data output (B signal)
244	ARO29	Address data output (R signal)
245	OVDDE-12	3.3V power supply
246	ARO27	Address data output (R signal)
247	ARO26	Address data output (R signal)
248	ARO25	Address data output (R signal)
249	OVDDE-13	3.3V power supply
250	AGO23	Address data output (G signal)

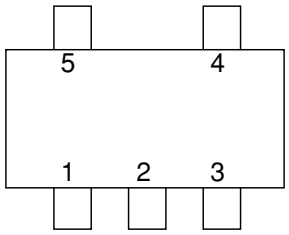
No.	Pin Name	Function
251	AGO22	Address data output (G signal)
252	VDDI	2.5V power supply
253	ABO20	Address data output (B signal)
254	OVSS-07	GND
255	OVDDE-15	3.3V power supply
256	OVSS-08	GND
257	RBI2	The R picture B aspect signal input (the second bit)
258	TRST	JTAG signal
259	GBI9	The G picture B aspect signal input (the ninth bit)
260	GBI6	The G picture B aspect signal input (the sixth bit)
261	OVDDE-17	3.3V power supply
262	GBI3	The G picture B aspect signal input (the third bit)
263	GBI0	The G picture B aspect signal input (the 0 bit)
264	BBI8	The B picture B aspect signal input (the eighth bit)
265	BBI4	The B picture B aspect signal input (the fourth bit)
266	BBI1	The B picture B aspect signal input (the first bit)
267	RAI8	The R picture A aspect signal input (the eighth bit)
268	OVDDE-19	3.3V power supply
269	RAI4	The R picture A aspect signal input (the fourth bit)
270	RAI0	The R picture A aspect signal input (the 0 bit)
271	FREERUN	The freerun control input
272	GAI8	The G picture A aspect signal input (the eighth bit)
273	GAI5	The G picture A aspect signal input (the fifth bit)
274	GAI1	The G picture A aspect signal input (the first bit)
275	BAI8	The B picture A aspect signal input (the eighth bit)
276	BAI4	The B picture A aspect signal input (the fourth bit)
277	VDDE	3.3V power supply
278	OSDV	OSDV input
279	VSS	GND
280	OSDR	OSDR signal input
281	VDDE	3.3V power supply
282	AGO1	Address data output (G signal)
283	VSS	GND
284	VDDI	2.5V power supply
285	VDDI	2.5V power supply
286	AGO5	Address data output (G signal)
287	AGO6	Address data output (G signal)
288	VDDI	2.5V power supply
289	AGO8	Address data output (G signal)
290	VSS	GND
291	ADRCLKO0	The address CLK output (for panel upper part)
292	VDDE	3.3V power supply
293	ARO11	Address data output (R signal)
294	VSS	GND
295	AGO13	Address data output (G signal)
296	VDDE	3.3V power supply
297	ABO18	Address data output (B signal)
298	VSS	GND
299	TESTO0	Test output terminal (unused)
300	VDDI	2.5V power supply

No.	Pin Name	Function
301	UDAT8	Microcomputer data bus
302	VSS	GND
303	UDAT2	Microcomputer data bus
304	VDDI	2.5V power supply
305	OVSS-04	GND
306	UADRI15	Microcomputer address bus
307	VDDI	2.5V power supply
308	UADRI12	Microcomputer address bus
309	VSS	GND
310	UADRI5	Microcomputer address bus
311	VDDI	2.5V power supply
312	NC	NC terminal
313	VSS	GND
314	AGO39	Address data output (G signal)
315	VDDE	3.3V power supply
316	ABO35	Address data output (B signal)
317	VSS	GND
318	AGO34	Address data output (G signal)
319	VDDE	3.3V power supply
320	ARO32	Address data output (R signal)
321	VSS	GND
322	ARO30	Address data output (R signal)
323	VDDI	2.5V power supply
324	AGO28	Address data output (G signal)
325	AGO27	Address data output (G signal)
326	NC	NC terminal
327	AGO25	Address data output (G signal)
328	VSS	GND
329	ABO23	Address data output (B signal)
330	VDDE	3.3V power supply
331	ABO21	Address data output (B signal)
332	VSS	GND
333	VPD	GND
334	VDDE	3.3V power supply
335	RBI0	The R picture B aspect signal input (the 0 bit)
336	VSS	GND
337	ACLK	CLK input (25MHz)
338	VDDI	2.5V power supply
339	CLK4	CLK input (50MHz)
340	VSS	GND
341	BBI7	The B picture B aspect signal input (the seventh bit)
342	VDDI	2.5V power supply
343	BBI0	The B picture B aspect signal input (the 0 bit)
344	RAI7	The R picture A aspect signal input (the seventh bit)
345	VDDI	2.5V power supply
346	RAI3	The R picture A aspect signal input (the third bit)
347	VSS	GND
348	CLK2	The image system CLK input
349	VDDI	2.5V power supply
350	GAI4	The G picture A aspect signal input (the fourth bit)
351	VSS	GND
352	BAI7	The B picture A aspect signal input (the seventh bit)

■ PST9246N (DIGITAL VIDEO ASSY : IC1208)

• Reset IC

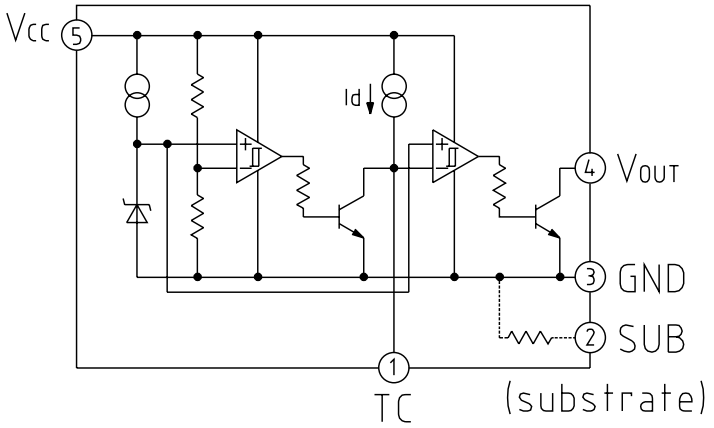
● Pin Assignment (Top View)



SOT-25
(TOP VIEW)

1	TC
2	SUB
3	GND
4	V_{OUT}
5	V_{CC}

● Block Diagram



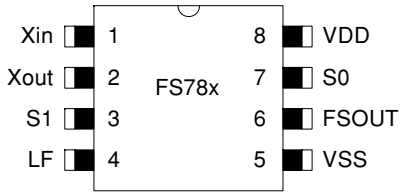
● Pin Function

Pin No.	Pin name	Functions
1	TC	T_{PLH} control pin
2	SUB	Substrate pin
3	GND	GND pin
4	V_{OUT}	Reset signal output pin
5	V_{CC}	V_{CC} pin/voltage detect pin

■ FS781BZB (DIGITAL VIDEO ASSY : IC1802)

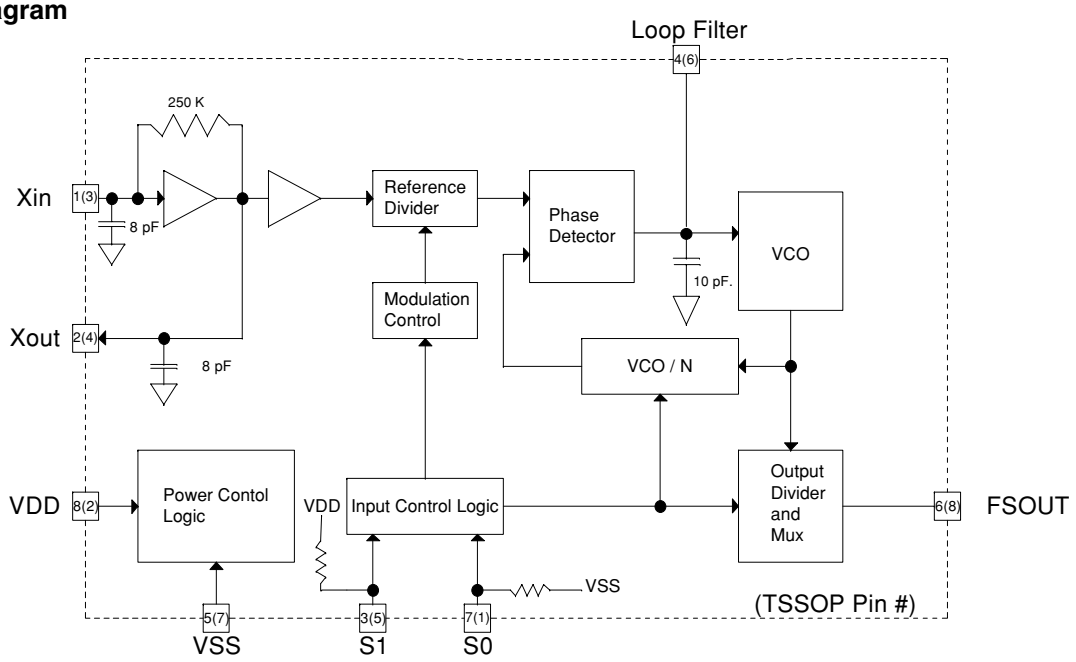
- **Low EMI Clock IC**

● Pin Assignment (Top View)



8 Pin SOIC Package

● Block Diagram



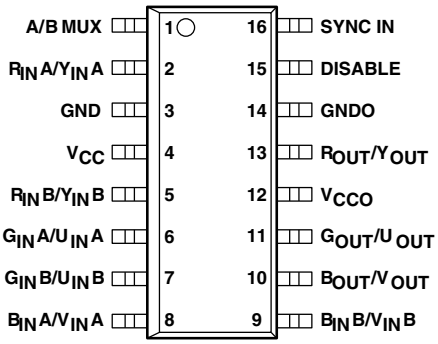
● Pin Function

Pin No.	Pin Name	I/O	TYPE	Description
1/2	Xin / Xout	I/O	Analog	Pins form an on-chip reference oscillator when connected to terminals of an external parallel resonant crystal. Xin may be connected to TTL/CMOS external clock source. If Xin connected to external clock other than crystal, leave Xout (pin 2) unconnected.
7/3	S0 / S1	I	CMOS/TTL	Digital control inputs to select input frequency range and output frequency scaling. Refer to Tables 7 & 8 for selection. S0 has internal pulldown. S1 has internal pullup.
4	LF	I	Analog	Loop Filter. Single ended tri-state output of the phase detector. A two-pole passive loop filter is connected to Loop Filter (LF).
6	FSOUT	O	CMOS/TTL	Modulated Clock Frequency Output. The center frequency is the same as the input reference frequency for FS781. Input frequency is multiplied by 2x and 4x for FS782 and FS784 respectively.
8	VDD	P	Power	Positive Power Supply.
5	VSS	P	Power	Power Supply Ground

■ ML6426CS-1 (RGB ASSY : IC4403)

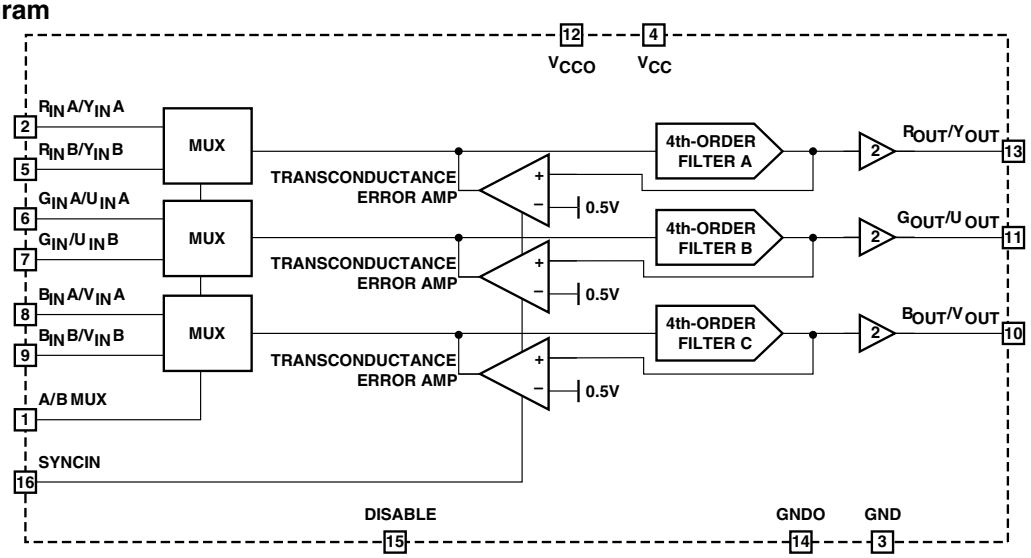
• LPF IC

● Pin Assignment (Top View)



TOP VIEW

● Block Diagram



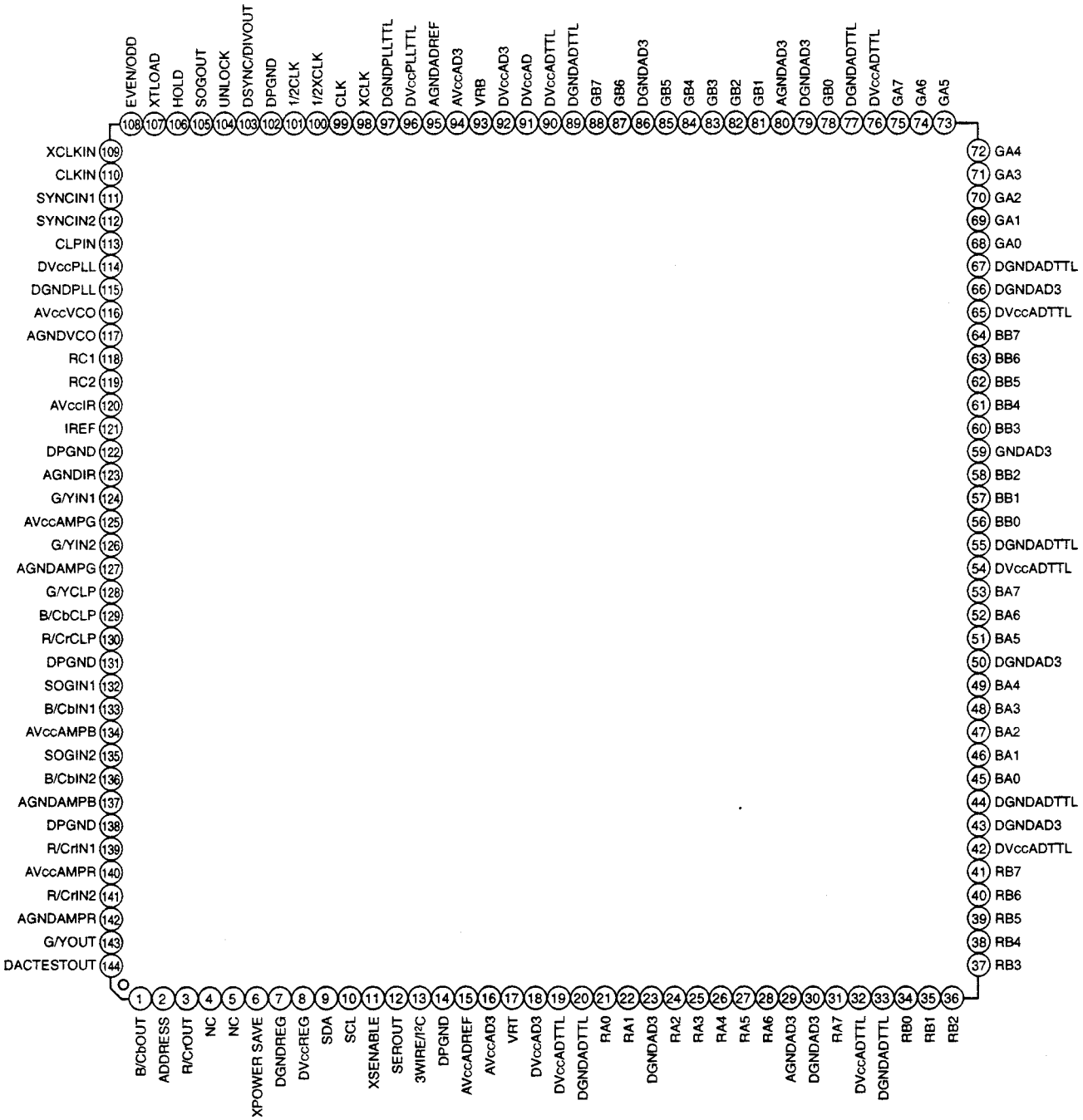
● Pin Function

PIN	NAME	FUNCTION
1	A/B MUX	Logic input pin to select between Bank <A> and Bank <B> video inputs. This pin is internally pulled high.
2	$R_{IN}A/Y_{IN}A$	Unfiltered analog R- or Y-channel input for Bank <A>. Sync must be provided at SYNC IN pin.
3	GND	Analog ground
4	V_{CC}	Analog 5V supply
5	$R_{IN}B/Y_{IN}B$	Unfiltered analog R- or Y-channel input for Bank <B>. Sync must be provided at SYNC IN pin.
6	$G_{IN}A/U_{IN}A$	Unfiltered analog G- or U-channel input for Bank <A>. Sync must be provided at SYNC IN pin.
7	$G_{IN}B/U_{IN}B$	Unfiltered analog G- or U-channel input for Bank <B>. Sync must be provided at SYNC IN pin.
8	$B_{IN}A/V_{IN}A$	Unfiltered analog B- or V-channel input for Bank <A>. Sync must be provided at SYNC IN pin.
9	$B_{IN}B/V_{IN}B$	Unfiltered analog B- or V-channel input for Bank <B>. Sync must be provided at SYNC IN pin.
10	B_{OUT}	Analog B or V-channel output
11	G_{OUT}	Analog G or U-channel output
12	V_{CCO}	5V power supply for output buffers
13	R_{OUT}	Analog R or Y-channel output
14	GNDO	Analog ground
15	DISABLE	Disable/Enable pin. Turns the chip off when logic high. Internally pulled low.
16	SYNC IN	Input for an external H-sync logic signal for filter channels. CMOS level input. Active High.

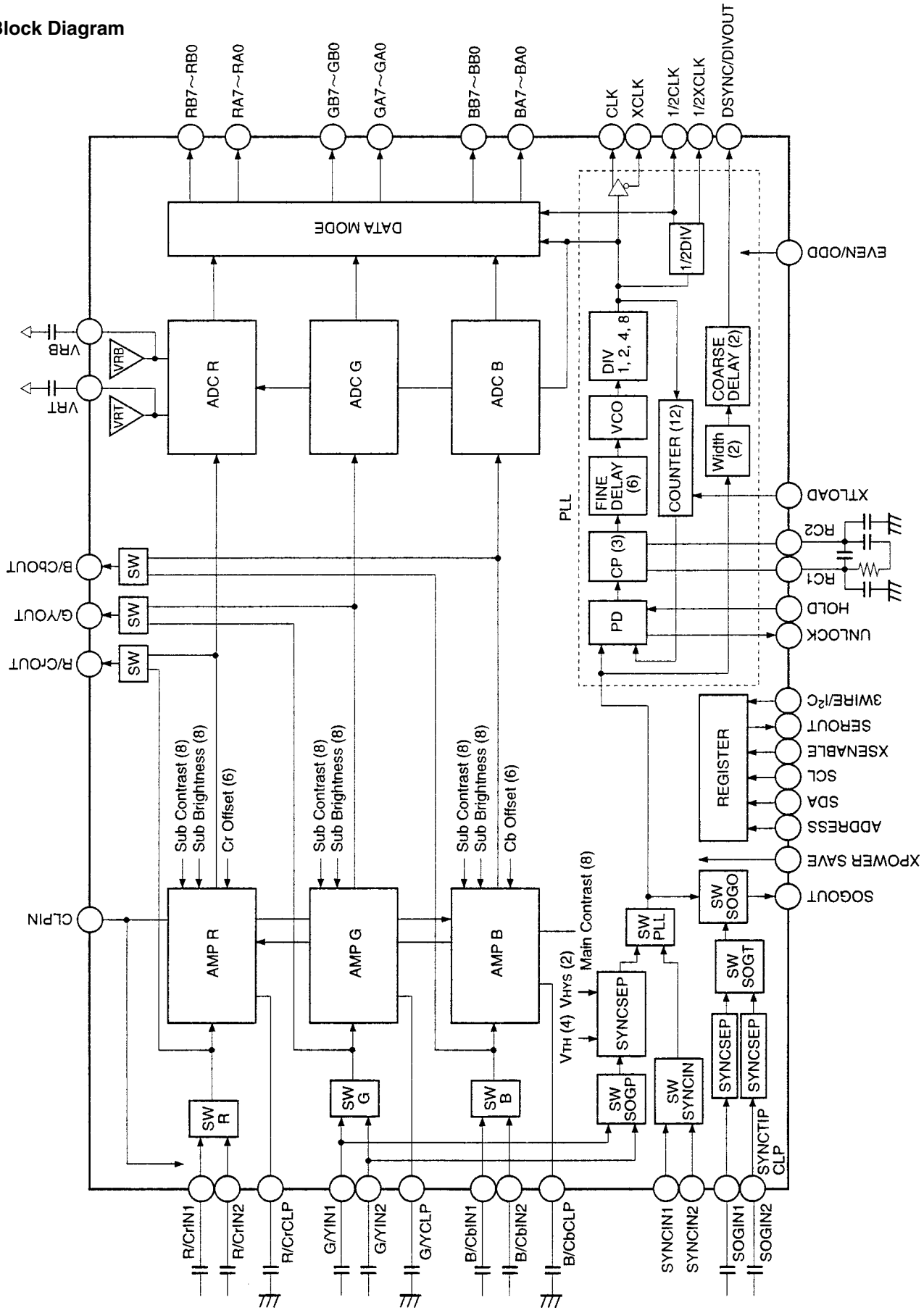
■ CXA3516R (RGB ASSY : IC4603)

- **AD + PLL IC**

- **Pin Assignment (Top View)**



• Block Diagram



• Pin Function

Pin No.	Symbol	I/O	Typical signal	Description
1	B/CbOUT	O	1.83V	Amplifier output signal monitor
2	ADDRESS	I	—	I^2C slave address setting
3	R/CrOUT	O	1.83V	Amplifier output signal monitor
4	NC	—	—	Not used
5	NC	—	—	Not used
6	XPOWER SAVE	I	TTL	Power save setting
7	DGNDREG	—	GND	Register GND
8	DVccREG	—	5V	Register power supply
9	SDA	I	—	Control register data input
10	SCL	I	—	Control register CLK input
11	XSENABLE	I	TTL	Enable signal input for 3-wire control register
12	SEROUT	O	TTL	3-wire control register data readout
13	3WIRE/I^2C	I	—	Selection of input between I^2C bus and 3-wire bus
15	AVccADREF	—	5V	Reference power supply for A/D converter
16, 94	AVccAD3	—	3.3V	Analog power supply for A/D converter
17	VRT	O	2.9V	Top reference voltage output for A/D converter
18, 92	DVccAD3	—	3.3V	Digital power supply for A/D converter
19, 32, 42, 54, 65, 76, 90	DVccADTTL	—	5V	TTL output power supply for A/D converter
20, 33, 44, 55, 67, 77, 89	DGNDADTTL	—	GND	TTL output GND for A/D converter
21, 22, 24 to 28, 31	RA0 to RA7	O	TTL	Data output for R-channel port A side
23, 30, 43, 50, 59, 66, 79, 86	DGNDAD3	—	GND	Digital GND for A/D converter
29, 80	AGNDAD3	—	GND	Analog GND for A/D converter
34 to 41	RB0 to RB7	O	TTL	Data output for R-channel port B side
45 to 49, 51 to 53	BA0 to BA7	O	TTL	Data output for B-channel port A side
56 to 58, 60 to 64	BB0 to BB7	O	TTL	Data output for B-channel port B side
68 to 75	GA0 to GA7	O	TTL	Data output for G-channel port A side
78, 81 to 85, 87, 88	GB0 to GB7	O	TTL	Data output for G-channel port B side
91	DVccAD	—	5V	Digital power supply for A/D converter
93	VRB	O	1.9V	Bottom reference voltage output for A/D converter
95	AGNDADREF	—	GND	Reference voltage GND for A/D converter

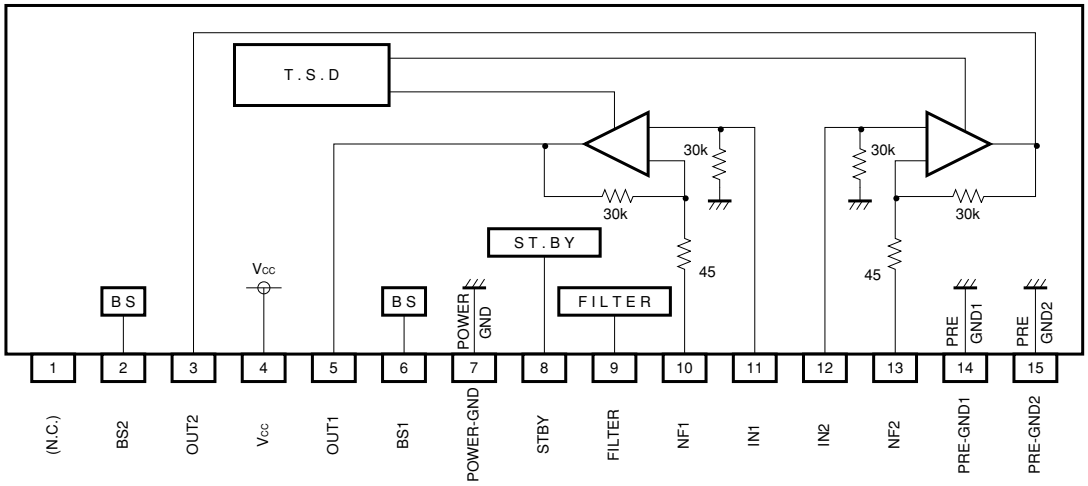
Pin No.	Symbol	I/O	Typical signal	Description
96	DVccPLLTTL	—	5V	TTL output power supply for PLL
97	DGNDPLLTTL	—	GND	TTL output GND for PLL
98	XCLK	O	TTL	Inverted CLK output
99	CLK	O	TTL	CLK output
100	1/2XCLK	O	TTL	Inverted 1/2CLK output
101	1/2CLK	O	TTL	1/2CLK output
103	DSYNC/ DIVOUT	O	TTL	DSYNC or DIVOUT signal output
104	UNLOCK	O	Open collector	Unlock signal output
105	SOGOUT	O	TTL	Output for SYNC ON GREEN
106	HOLD	I	TTL	Input for phase comparison disable signal
107	XTLOAD	I	TTL	Programmable counter reset setting
108	EVEN/ODD	I	TTL	Inverted pulse input of ADC sampling CLK
109	XCLKIN	I	PECL	Inverted CLK input for testing
110	CLKIN	I	PECL	CLK input for testing
111	SYNCIN1	I	TTL	Sync input 1
112	SYNCIN2	I	TTL	Sync input 2
113	CLPIN	I	TTL	Clamp pulse input
114	DVccPLL	—	5V	Digital power supply for PLL
115	DGNDPLL	—	GND	Digital GND for PLL
116	AVccVCO	—	5V	Analog power supply for PLL VCO
117	AGNDVCO	—	GND	Analog GND for PLL VCO
118	RC1	—	2.1V	External pin for PLL loop filter
119	RC2	—	2 to 4.5V	External pin for PLL loop filter
120	AVccIR	—	5V	Analog power supply for IREF
121	IREF	I	1.2V	Current setup
123	AGNDIR	—	GND	Analog GND for IREF
124	G/YIN1	I	—	G/Y signal input 1
125	AVccAMPG	—	5V	Power supply for G/Y amplifier block
126	G/YIN2	I	—	G/Y signal input 2
127	AGNDAMPG	—	GND	GND for G/Y amplifier block
128	G/YCLP	—	—	Clamp capacitor for brightness
129	B/CbCLP	—	—	Clamp capacitor for brightness
130	R/CrCLP	—	—	Clamp capacitor for brightness
132	SOGIN1	I	2.8V	SYNC ON GREEN signal input 1
133	B/CbIN1	I	—	B/Cb signal input 1

Pin No.	Symbol	I/O	Typical signal	Description
134	AVccAMPB	—	5V	Power supply for B/Cb amplifier block
135	SOGIN2	I	2.8V	SYNC ON GREEN signal input 2
136	B/CbIN2	I	—	B/Cb signal input 2
137	AGNDAMPB	—	GND	GND for B/Cb amplifier block
139	R/CrIN1	I	—	R/Cr signal input 1
140	AVccAMPR	—	5V	Power supply for R/Cr amplifier block
141	R/CrIN2	I	—	R/Cr signal input 2
142	AGNDAMPR	—	GND	GND for R/Cr amplifier block
143	G/YOUT	O	1.83V	Monitor pin for amplifier output signal
144	DAC TEST OUT	O	5V	DAC testing output for amplifier block control register
14, 102, 122, 131, 138	DPGND	—	GND	GND

■ BA5417 (MX AUDIO ASSY : IC8601)

• **Power Amp.**

● Block Diagram



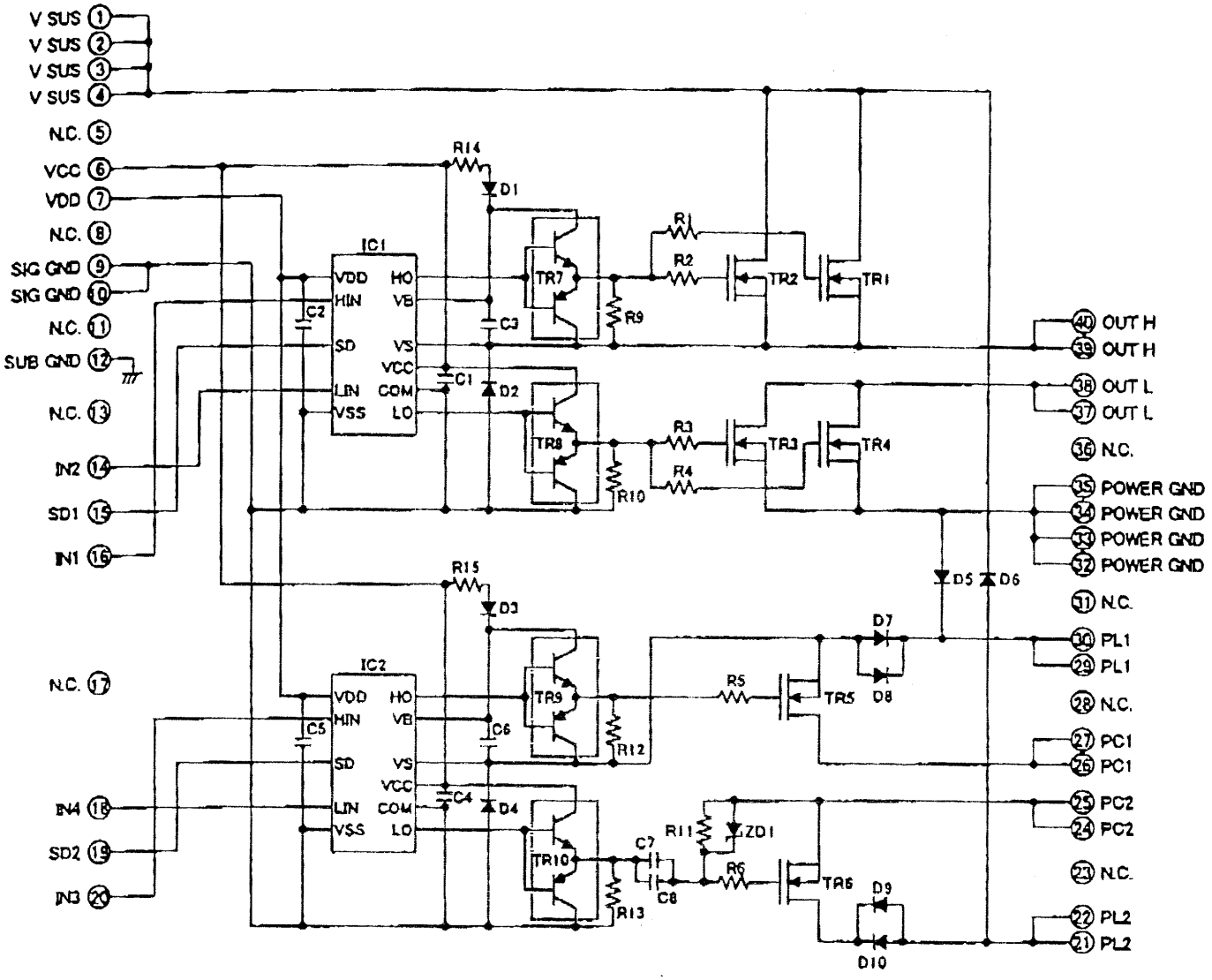
● Pin Function

Terminal No.	Name of terminal	Description
1	(NC)	−
2	BS2	Boot-strap terminal 2
3	OUT2	Output terminal 2
4	VCC	Power source terminal
5	OUT1	Output terminal 1
6	BS1	Boot-strap terminal 1
7	POWER−GND	Power GND
8	STBY	Stand-by control terminal
9	FILTER	Ripple filter terminal
10	NF1	Feedback terminal 1
11	IN1	Input terminal 1
12	IN2	Input terminal 2
13	NF2	Feedback terminal 2
14	PRE−GND1	Small signal GND 1
15	PRE−GND2	Small signal GND 2

■ STK795-460 (X DRIVE ASSY : IC3200, IC3201)
(Y DRIVE ASSY : IC2206, IC2214)

• **PDP Pulse Module IC**

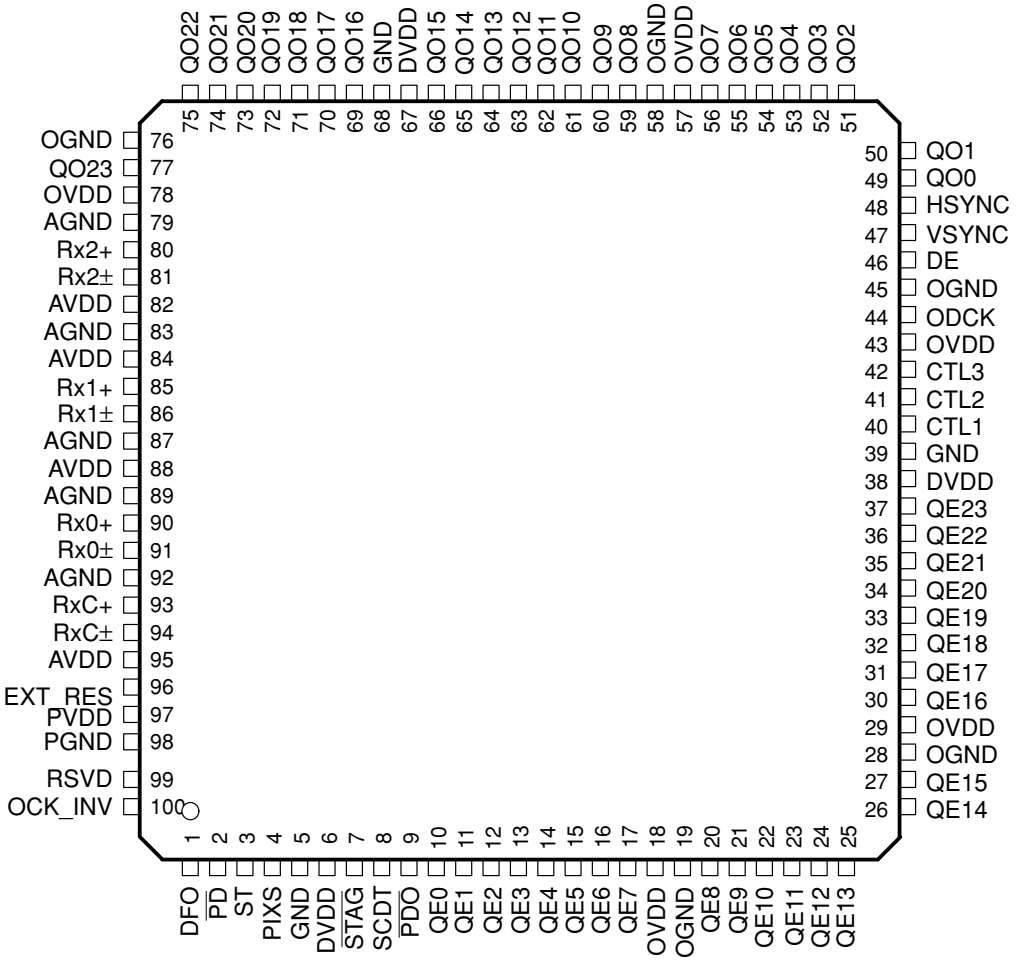
● **Block Diagram**



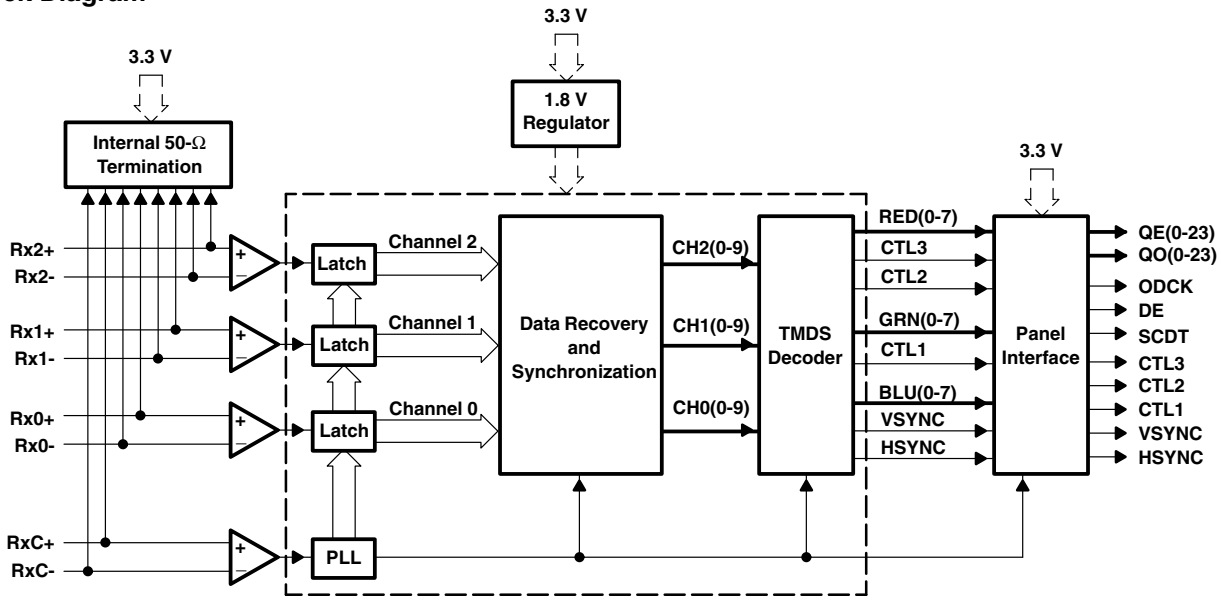
■ TFP201A (VIDEO SLOT ST1 ASSY : IC7401)

• Panel Bus Receiver

● Pin Assignment (Top View)



● Block Diagram



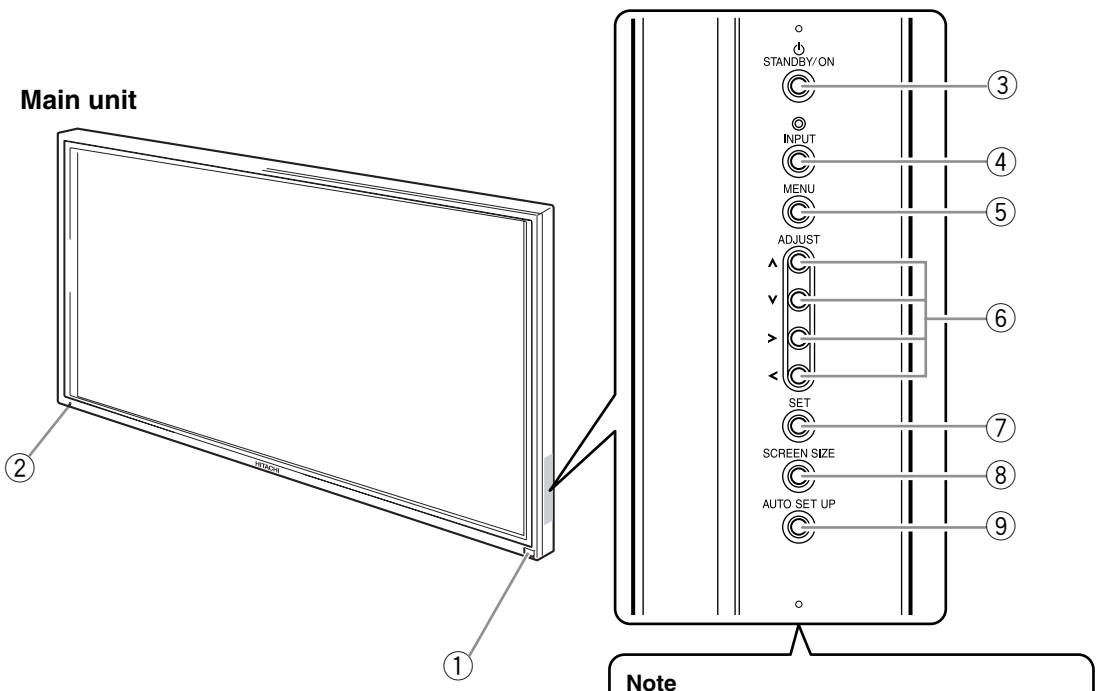
8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

■ MAIN UNIT

Operation panel on the main unit

Main unit



Note
When optional speakers have been connected, the operation panel on the main unit will not be operable.

Main unit

① **Remote control sensor**
Point the remote control toward the remote sensor to operate the unit.

② **STANDBY/ON indicator**
This indicator is red during standby mode, and turns to green when the unit is in the operation mode.
Flashes green when Power-Management function is operating.
The flashing pattern is also used to indicate error messages.

Operation panel on the main unit

③ **STANDBY/ON button**
Press to put the display in operation or standby mode.

④ **INPUT button**
Press to select input.

⑤ **MENU button**
Press to open and close the on-screen menu.

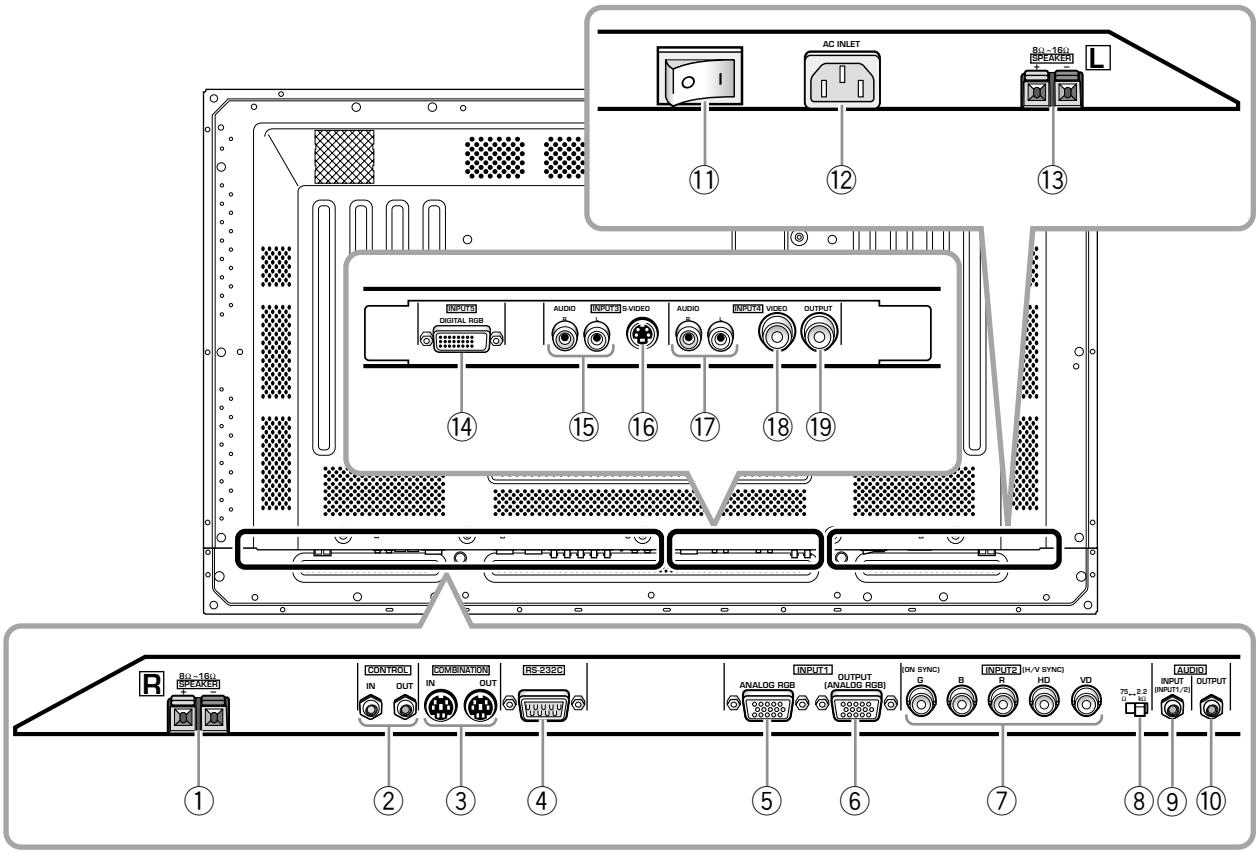
⑥ **ADJUST (▲/▼/►/◄) buttons**
Use to navigate menu screens and to adjust various settings on the unit.
Usage of cursor buttons within operations is clearly indicated in the on-screen display.

⑦ **SET button**
Press to adjust or enter various settings on the unit.

⑧ **SCREEN SIZE button**
Press to select the screen size.

⑨ **AUTO SET UP button**
When using computer signal input, automatically sets the POSITION and CLOCK/PHASE to optimum values.

CONNECTION PANEL



Plasma Display [CMP5000WX] Section

The plasma display is provided with 2 video input connectors, 1 video output connector, audio input/output jacks and speaker terminals.
When this video card is installed on a plasma display, an additional three sets of video input connectors are provided (total five), together with one additional video output connector (total two).

① **SPEAKER (R) terminal**
For connection of an external right speaker.
Connect a speaker whose impedance is 8 -16 Ω.

② **CONTROL IN/OUT (monaural mini jacks)**
DO NOT MAKE ANY CONNECTIONS TO THESE TERMINALS.
These terminals are used in the factory setup.

③ **COMBINATION IN/OUT**
DO NOT MAKE ANY CONNECTIONS TO THESE TERMINALS.
These terminals are used in the factory setup.

④ **RS-232C**
DO NOT MAKE ANY CONNECTIONS TO THIS TERMINAL.
This terminal is used in the factory setup.

⑤ **INPUT1 (mini D-sub 15 pin)**
For connection of components that have RGB or component output jacks such as a personal computer, DVD player, or external RGB decoder. Make sure that the connection made corresponds to the format of the signal output from the connected component.

⑥ **OUTPUT (INPUT1) (mini D-sub 15 pin)**
Use the OUTPUT (INPUT1) connector to output the video signal to an external monitor or other component.

Note: The video signal will not be output from the OUTPUT (INPUT1) connector when the main power of this display is off or in standby mode.

⑦ **INPUT2 (BNC jacks)**
For connection of components that have RGB or component output jacks such as a personal computer, DVD player, or external RGB decoder. Make sure that the connection made corresponds to the format of the signal output from the connected component.

⑧ **Synchronizing signal impedance selector switch**
Depending on the connections made at INPUT2, it may be necessary to set this switch to match the output impedance of the connected component's synchronization signal.
When the output impedance of the component's synchronization signal is above 75 Ω, set this switch to the 2.2 kΩ position.

⑨ **AUDIO INPUT (Stereo mini jack)**
Use to obtain sound when INPUT1, INPUT2 or INPUT5 is selected.
Connect this jack to the audio output connector of the device connected to the plasma display's INPUT1 or INPUT2, or to the audio output connector of the device connected to the video card's INPUT5.

⑩ **AUDIO OUTPUT (Stereo mini jack)**
Use to output the audio of the selected source component connected to the plasma display to an AV amplifier or similar component.

⑪ **MAIN POWER switch**
Use to switch the main power of the plasma display on and off.

⑫ **AC INLET**
A power cable is furnished with the plasma display; connect one end of the power cable to this connector, and the other end to a standard AC power source.

⑬ **SPEAKER (L) terminal**
For connection of an external left speaker. Connect a speaker that has an impedance of 8 -16 Ω.

Video Card [CMPAV05] Section

The video card is provided with 3 video input connectors, 1 video output connector, and 2 audio input connectors.

⑭ **INPUT5 (DVI-D jack)**
Use to connect a computer.
Note: This unit does not support the display of copyguard-protected video signals.

⑮ **AUDIO INPUT3 (RCA Pin jacks)**
Use to obtain sound when INPUT3 is selected.
Connect these jacks to the audio output connectors of components connected to the video card's INPUT3.
Note: The left audio channel (L) jack is not compatible with monaural input sources.

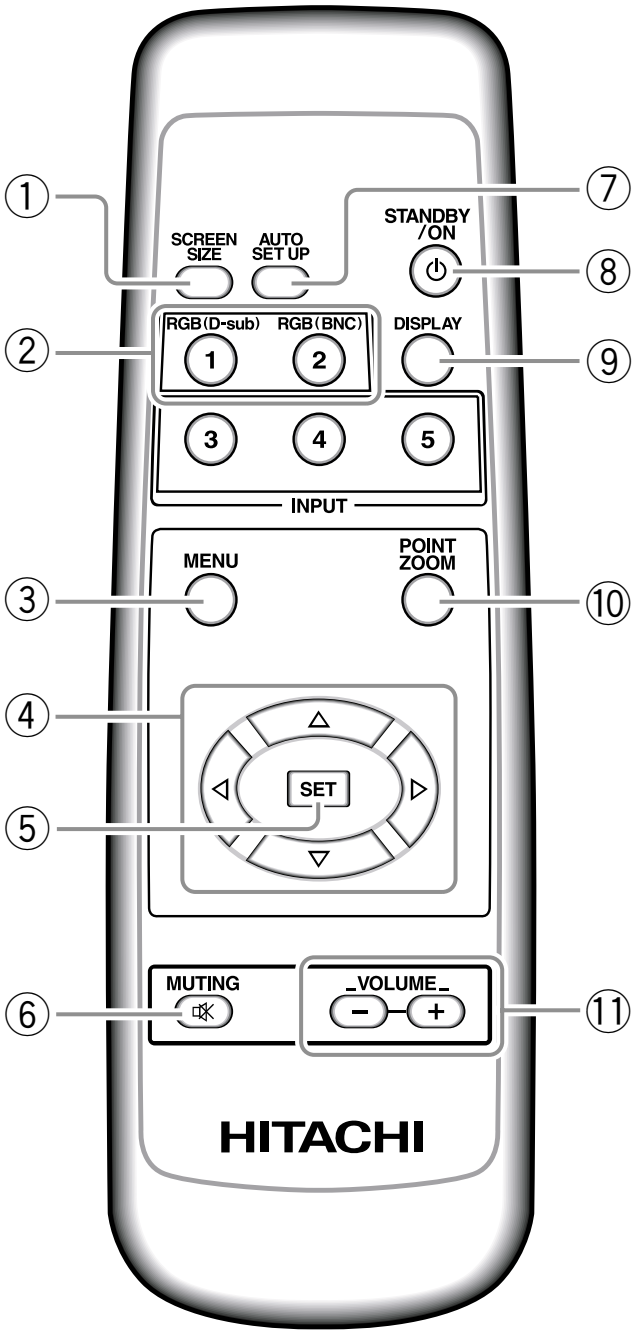
⑯ **INPUT3 (S-video jack)**
For connection of components that have an S-video output jack such as a video deck, video camera, laser disc player, or DVD player.

⑰ **AUDIO INPUT4 (RCA Pin jacks)**
Use to obtain sound when INPUT4 is selected.
Connect these jacks to the audio output connectors of components connected to the video card's INPUT4.
Note: The left audio channel (L) jack is not compatible with monaural input sources.

⑱ **INPUT4 (BNC jack)**
For connection of components that have a composite video output jack such as a video deck, video camera, laser disc player, or DVD player.

⑲ **OUTPUT (INPUT4) (BNC jack)**
Use the OUTPUT (INPUT4) jack to output the video signal to an external monitor or other component.
Note: The video signal will not be output from the OUTPUT (INPUT4) jack when the main power of this display is off or in standby mode.

REMOTE CONTROL UNIT



① **SCREEN SIZE button**
Press to select the screen size.

② **INPUT buttons**
Use to select the input.

③ **MENU button**
Press to open and close the on-screen menu.

④ **ADJUST (▲/▼/►/◄) buttons**
Use to navigate menu screens and to adjust various settings on the unit.
Usage of cursor buttons within operations is clearly indicated at the bottom the on-screen menu display.

⑤ **SET button**
Press to adjust or enter various settings on the unit.

⑥ **MUTING button**
Press to mute the volume.

⑦ **AUTO SET UP button**
When using computer signal input, automatically sets the POSITION and CLOCK/ PHASE to optimum values.

⑧ **STANDBY/ON button**
Press to put the unit in operation or standby mode.

⑨ **DISPLAY button**
Press to view the unit's current input and setup mode.

⑩ **POINT ZOOM button**
Use to select and enlarge one part of the screen.

⑪ **VOLUME (+/–) buttons**
Use to adjust the volume.

INSTALLING THE VIDEO CARD(CMPAV05)

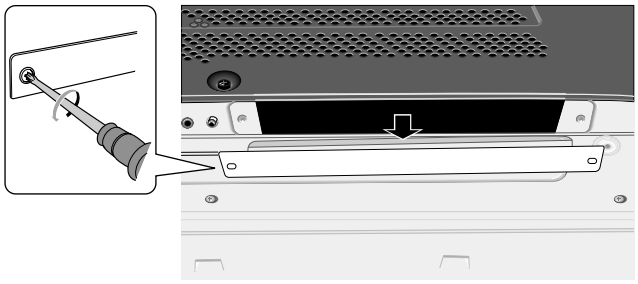
Confirm the following before installing this video card:
- Disconnect the plasma display from computer or other components.
- Disconnect the plasma display's power cord from its outlet.

Installation Notes:

- When opening the installation cover, take care not to drop screws or other objects in the opening. Objects dropped inside the display may cause damage or malfunction.
- When installing the video card, if the plasma display is laid with its screen side facing down, the work surface should be flat and level, and either the packing material, a blanket, or other soft material should be spread on the work surface first to protect the screen. Take care to prevent scratches or other damage to the unit from tools or other objects. Never rest the display on a surface in such a way that weight or pressure is placed only on the screen surface.
- This video card has been designed for exclusive use with the HITACHI Plasma Display CMP5000WX. Do not attempt unauthorized modifications or alterations since malfunction or damage may result.
- Take care not to modify or damage the card's internal devices in any way.
- Before installation, take precautions to eliminate static electricity on your body. Do not touch the card's circuitry or devices.
- This device has not been designed to allow reinstallation or removal; after the card has once been installed on the plasma display, do not attempt to remove it since damage may result.

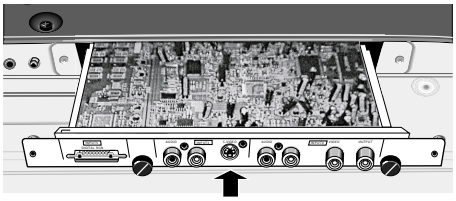
Installation

1 Remove the protective cover over the video card slot on the plasma display's terminal panel.

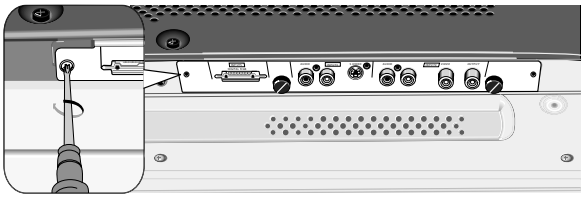


2 Insert the video card gently and evenly in alignment with the two rails (white) visible inside the installation port.

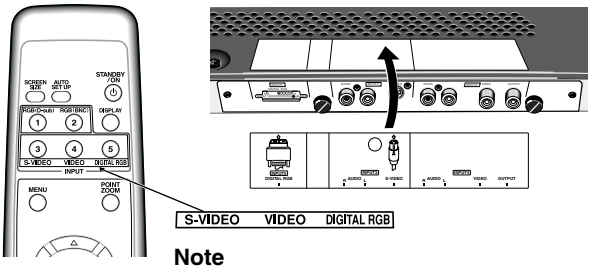
Note
Be very careful when inserting the card. Insert straight! The card or display may be damaged if the card is inserted crooked or with excessive force.



3 After inserting the video card all the way into the slot, confirm that it is seated securely, then use the screws removed in step 1 to secure the card in place.



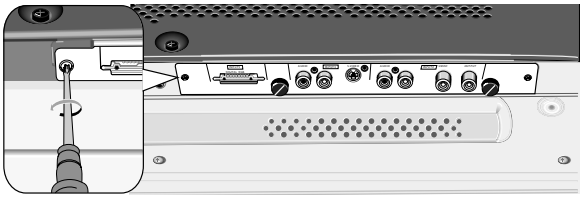
4 Affix the accessory connector indicator label to the plasma display, and affix the remote control unit label to the remote control unit furnished with the plasma display.



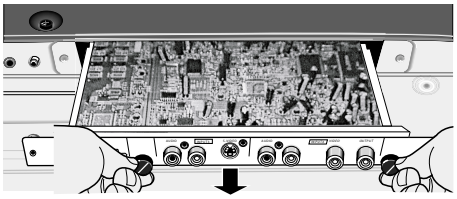
Note
Use a soft cloth to gently wipe any dust from the surface before affixing the label.

Video Card Removal (In principle, removal of the video card should not be attempted).

1 Remove the two screws holding the video card.



2 Holding the inside tabs, pull the video card out straight.



MEMO

Installation using the optional HITACHI stand or installation bracket

- Please be sure to request installation or mounting of this unit or the installation bracket by an installation specialist or the dealer where purchased.
- When installing, be sure to use the bolts provided with the stand or installation bracket.
- For details concerning installation, please refer to the instruction manual provided with the stand or installation bracket.

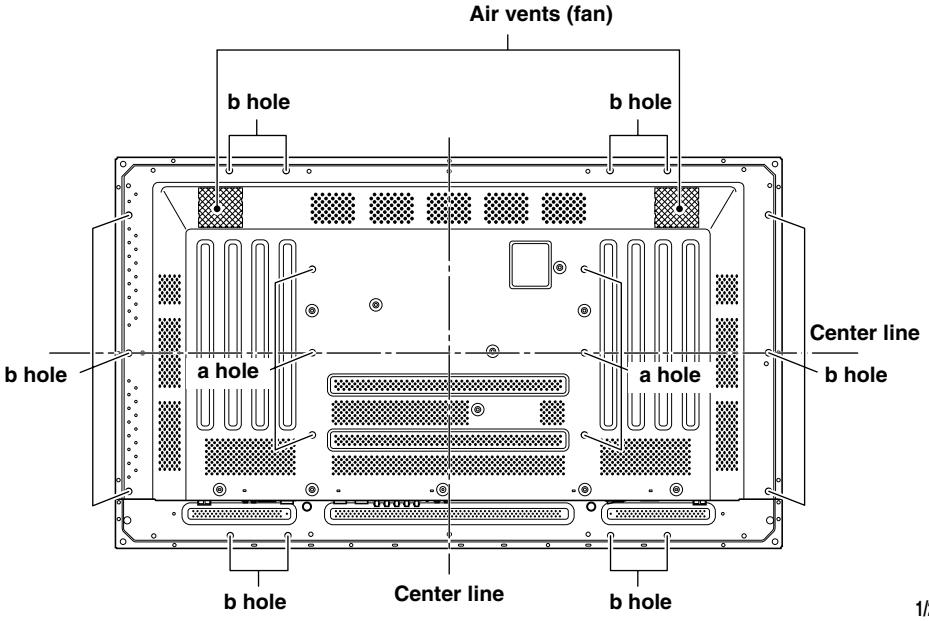
Installation using accessories other than the HITACHI stand or installation bracket (sold separately)

- When possible, please install using parts and accessories manufactured by HITACHI. HITACHI will not he held responsible for accident or damage caused by the use of parts and accessories manufactured by other companies.
- For custom installation, please consult the dealer where the unit was purchased, or a qualified installer.

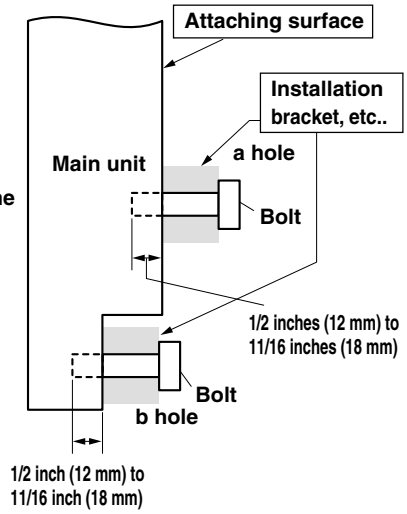
Wall-mount installation of the unit

This unit has been designed with bolt holes for wall-mount installation, etc.. The installation holes that can be used are shown in the diagram below.

- Be sure to attach in 4 or more locations above and below, left and right of the center line.
- Use bolts that are long enough to be inserted 1/2 inch (12 mm) to 11/16 inch (18 mm) into the main unit from the attaching surface for both a holes and b holes. Refer to the side view diagram below.
- As this unit is constructed with glass, be sure to install it on a flat, unwarped surface.



Rear view diagram



Side view diagram

⚠ CAUTION

To avoid malfunction, overheating of this unit, and possible fire hazard, make sure that the vents on the main unit are not blocked when installing. Also, as hot air is expelled from the air vents, be careful of deterioration and dirt build up on rear surface wall, etc..

⚠ CAUTION

Please be sure to use an M8 (Pitch = 1.25 mm) bolt. (Only this size bolt can be used.)

⚠ CAUTION

Because this unit weighs about 88 lbs 3 oz (about 40 kg) and the lack of depth makes it fairly unstable, please use 2 people or more when packing, carrying or installing.

⚠ CAUTION

This unit incorporates a thin design. To ensure safety if vibrated or shaken, please be sure to take measures to prevent the unit from tipping over.

8.2 SPECIFICATIONS

■ PLASMA DIAPLAY (CMP5000WX)

General

Light emission panel ..... 50 inch plasma display panel
Number of pixels ..... 1280 x 768
Power supply ..... AC 100 - 120 V, 50/60 Hz
(CMP5000WXU&CMP5000WXJ)
Power supply ..... AC 100 - 240 V, 50/60 Hz (CMP5000WXE)
Rated current ..... 3.8 A - 3.1A
(CMP5000WXU&CMP5000WXJ)
Rated current ..... 3.8 A - 3.1A (CMP5000WXE)
Standby power consumption ..... 1 W
External dimensions ..... 1218 (W) x 714 (H) x 98 (D) mm
47-31/32 (W) x 28-1/8 (H) x 3-7/8 (D) in.
(including display stand)
..... 1218 (W) x 737 (H) x 300 (D) mm
47-31/32 (W) x 29-1/32 (H) x 11-13/16 (D) in.
Weight ..... 38.9 kg (85 lbs. 12 oz)
(including display stand) ..... 39.5 kg (87 lbs. 1 oz)

Input/output

Video

INPUT 1

(Input) Mini D-sub 15 pin (socket connector)
RGB signal (G ON SYNC compatible)
RGB ... 0.7 Vp-p/75 Ω/no sync.
HD/CS, VD ... TTL level
/positive and negative polarity
/2.2 kΩ
G ON SYNC
... 1 Vp-p/75 Ω/negative sync.
*Compatible with Microsoft's Plug & Play
(VESA DDC1/2B)

(Output) Mini D-sub 15 pin (socket connector)
75 Ω/with buffer

INPUT 2

(Input) BNC jack (x5)
RGB signal (G ON SYNC compatible)
RGB ... 0.7 Vp-p/75 Ω/no sync.
HD/CS, VD ... TTL level
/positive and negative polarity/
75 Ω or 2.2 kΩ
(impedance switch)
G ON SYNC ...
1 Vp-p/75 Ω/negative sync.

Audio

(Input) AUDIO INPUT (for INPUT 1/2)
Stereo mini jack
L/R ... 500mVrms/more than 10 kΩ

(Output) AUDIO OUTPUT
Stereo mini jack
L/R ... 500mVrms (max)/less than 5 kΩ

SPEAKER
L/R ... 8 – 16 Ω/2W +2W (at 8 Ω)

Control

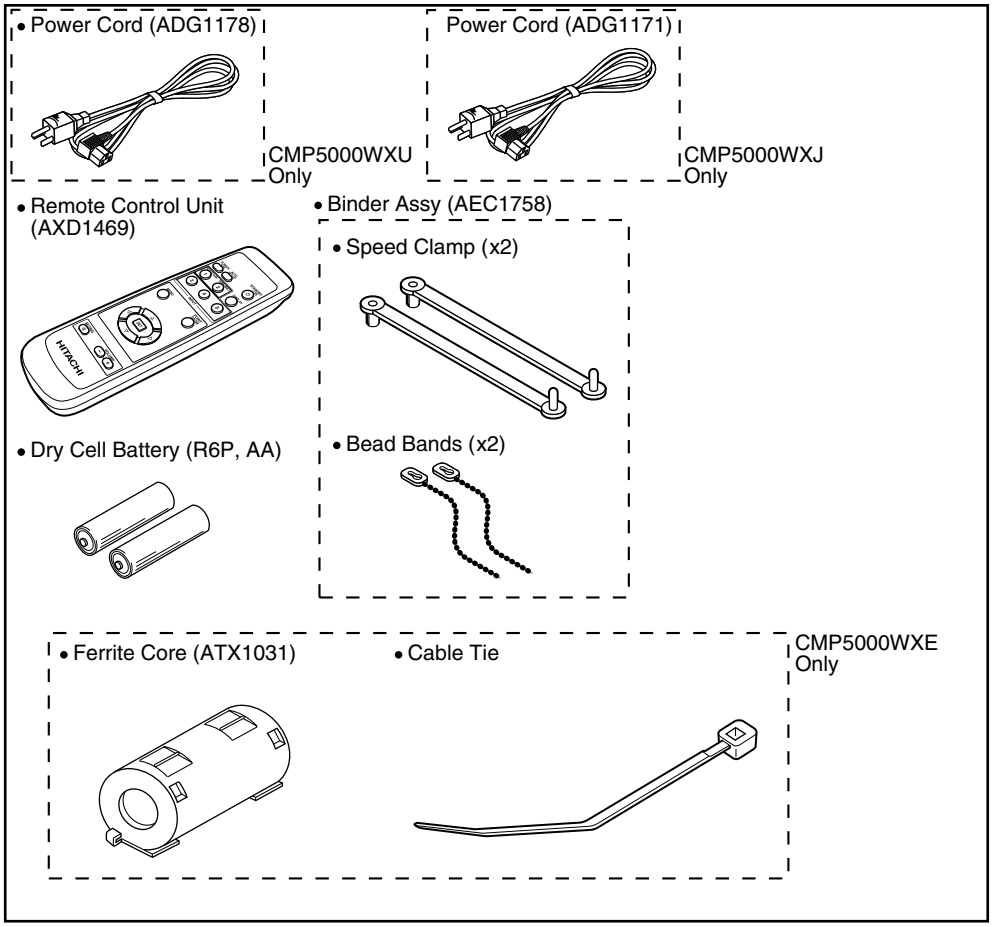
RS-232C ... D-sub 9 pin (pin connector)
COMBINATION IN/OUT
... Mini DIN 6 pin (x2)
CONTROL IN/OUT ... monaural mini jack (x2)

Accessories

Power cord ..... 1 (CMP5000WXU,CMP5000WXJ Only)
Remote control unit 1
AA (R6) batteries 2
Speed clamps 2
Bead bands 2
Warranty ..... 1 (CMP5000WXJ Only)
User Manual 1
Ferrite core ..... 1 (CMP5000WXE Only)
Cable tie ..... 1 (CMP5000WXE Only)

- Due to improvements, specifications and design are subject to change without notice.

● Accessories



■ VIDEO CARD [CMPAV05]

General

External dimensions ..... 243.8 (W) x 23.6 (H) x 144 (D) mm
9–5/8 (W) x 29/32 (H) x 5–11/16 (D) in.
Weight ..... 0.3 kg (0.7 lbs.)
Operating temperature range ..... 0 to 40 °C (32 to 104 °F)

Input/output

Video

INPUT 3

(Input) S terminal (Mini DIN 4 pin)
- Y/C saparate video signal
  Y . . . 1 Vp-p/75 Ω/negative sync.
  C . . . 0.286 Vp-p/75 Ω (NTSC)
  0.3 Vp-p/75 Ω (PAL)

INPUT 4

(Input) BNC jack
- Composite video signal
  1 Vp-p/75 Ω/negative sync.

(Output) BNC jack
75 Ω /with buffer

INPUT 5

(Input) DVI-D 24-pin connector
- Digital RGB signal (DVI compliant TMDS signal)

∗ INPUT 5 supports Microsoft “Plug & Play” (VESA DDC 2B) standards.

Audio

(Input) AUDIO INPUT (for INPUT 3)
Pin jack (x2)
L/R ... 500mVrms/more than 10 kΩ

AUDIO INPUT (for INPUT 4)
Pin jack (x2)
L/R ... 500mVrms/more than 10 kΩ

Accessories

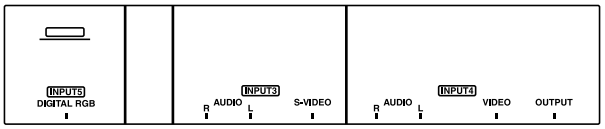
Label for remote control unit 1
Connector indicator label 1
User Manual 1

- Due to improvements, specifications and design are subject to change without notice.

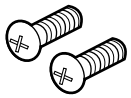
● Accessories

- Label for Remote Control Unit (AAX2861)

- Connector Indicator Label (AAX2854)

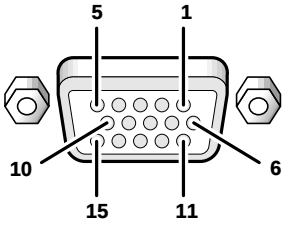


- Screws × 2 (Accessory screws for installing video card) (BMZ30P060FZK)



8.3 Pin layout

INPUT 1 (Mini D-sub, 15-pin connector; female) pin layout

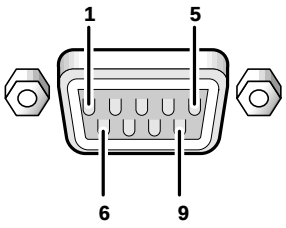


Pin No.	⑰ INPUT1 input terminals	⑱ INPUT1 output terminals
1	R or C_R/P_R	←
2	G or Y	←
3	B or C_B/P_B	←
4	NC (not connected)	←
5	GND	←
6	GND	←
7	GND	←
8	GND	←
9	DDC +5V	NC (not connected)
10	GND	←
11	NC (not connected)	←
12	DDC SDA	NC (not connected)
13	HD or H/V SYNC	←
14	VD	←
15	DDC SCL	NC (not connected)

Combination IN/OUT terminal pin layout

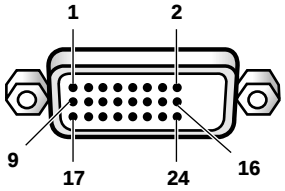
Pin No.	Combination IN	Combination OUT
1	GND	GND
2	NC (not connected)	NC (not connected)
3	TxD (output)	RxD (input)
4	NC (not connected)	NC (not connected)
5	RxD (input)	TxD (output)
6	NC (not connected)	NC (not connected)

RS-232C terminal (D-sub 9-pin connector; male) pin layout



Pin No.	Signal
1	NC (not connected)
2	TxD (Transmit Data)
3	RxD (Receive Data)
4	NC (not connected)
5	GND
6	NC (not connected)
7	NC (not connected)
8	RTS (Request To Send)
9	NC (not connected)

INPUT 5 ★ (DVI-D 24 pin connector; female) pin layout



Pin No.	Signal Assignment
1	T.M.D.S. Data2–
2	T.M.D.S. Data2+
3	T.M.D.S. Data2/4 Shield
4	NC (No connection)
5	NC (No connection)
6	DDC Clock
7	DDC Data
8	NC (No connection)
9	T.M.D.S. Data1–
10	T.M.D.S. Data1+
11	T.M.D.S. Data1/3 Shield
12	NC (No connection)
13	NC (No connection)
14	+5V Power
15	GND
16	Hot Plug Detect
17	T.M.D.S. Data0 –
18	T.M.D.S. Data0 +
19	T.M.D.S. Data0/5 Shield
20	NC (No connection)
21	NC (No connection)
22	T.M.D.S. Clock Shield
23	T.M.D.S. Clock+
24	T.M.D.S. Clock–

9. Replacement Parts list

Product Safety Note : Components marked a ⚠ have special characteristics important to safety. Don't degrade the safety of the receiver through improper servicing.

	No.		Parts No.	Parts Name	Remarks
	1.	FRONT FRAME	TJ03071	AMB2734 FRONT CASE	FOR USA/JP MODEL
		FRONT FRAME	TJ03072	AMB2752 FRONT CASE SI	FOR EUROPE MODEL
	2.	BACK COVER ASS'Y	TJ03081	ANE1597 REAR CASE	
	3.	DC FAN	TE02011	AXM1040 FAN MOTOR 80	
⚠	4.	FILTER PANEL	TJ03091	AMR3304 FRONT FILTER	
⚠	5.	POWER CABLE	TE02031	ADG1178 POW.CABLE UL	FOR USA MODEL
		POWER CABLE	TE02041	ADG1171 POW.CABLE JA	FOR JAPAN MODEL
⚠	6.	POWER UNIT *2	TS04071	AXY1059 POWER SUPPLY	See Page22.
		WARNING LABEL *1	TP00921	AAX2644 WARNING LABEL	FOR USA MODEL *1
	7.	X DRIVE ASSY	TS03881	AWV1901 X DRIVE ASSY	
	8.	Y DRIVE ASSY	TS03951	AWZ6645 Y DRIVE ASSY	
	9.	SLOT CONNECTOR ASSY	TS03941	AWZ6634 SLOT CON.	
	10.	SUB ADDRESS A ASSY	TS03961	AWZ6689 SUB ADD. A	
	11.	SUB ADDRESS B ASSY	TS03971	AWZ6690 SUB ADD. B	
	12.	SENSOR ASSY	TS03981	AWZ6696 SENSOR ASSY	
	13.	I/O ASSY	TS03911	AWZ6631 I/O ASSY	
	14.	DIGITAL VIDEO ASSY	TS03891	AWV1903 DIGI. VIDEO	
	15.	RGB ASSY	TS03921	AWZ6698 RGB ASSY	
	16.	CONTROL ASSY	TS03991	AWZ6633 CONTROL ASSY	
	17.	SP OUT L ASSY	TS04001	AWZ6635 SP OUT L	
	18.	SP OUT R ASSY	TS04011	AWZ6636 SP OUT R	
	19.	SIDE KEY ASSY	TS04021	AWZ6637 SIDE KEY	
	20.	MX LED ASSY	TS04031	AWZ6642 MX LED ASSY	
	21.	IR ASSY	TS04041	AWZ6643 IR ASSY	
	22.	MX AUDIO ASSY	TS04051	AWZ6644 MX AUDIO	
	23.	KEY CON. ASSY	TS04061	AWZ6695 KEY CON.	
	24.	USER MANUAL	TP00901	ARD1050 MANUAL J/E/F	FOR USA/JP MODEL
		USER MANUAL	TP00911	ARE1362 MANUAL EURO	FOR EUROPE MODEL
	25.	REMOTE CONTROLLER	TE02021	AXD1469 REMOTE CONT.	
	26.	TOP & BOT. CUSHION	TJ03121	AHA2280 PAD	
	27.	CARTON BOX	TJ03101	AHD3143 UPPER CARTON	
	28.	TRAY	TJ03111	AHD3037 UNDER CARTON	
	29.	MIRROR MAT	TJ03131	AHG1284 MIRROR MAT	
	30.	GLASS PANEL	TS04081	AWU1040 GLASS PANEL	

*1) When you change the Power unit for USA model, this warning label is needed. Please attach it on the same place of the aluminum plate.

*2) When you change the Power unit, change the position of the voltage changeover switch (SW101).
100V...for USA/JP MODEL.
200V...for EUROPE MODEL. (Factory setting)

HITACHI

Hitachi, Ltd. Tokyo, Japan
International Sales Division
THE HITACHI ATAGO BUILDING,
No. 15 –12 Nishi Shinbashi, 2 – Chome,
Minato – Ku, Tokyo 105-8430, Japan.
Tel: 03 35022111

HITACHI EUROPE LTD.
Dukes Meadow
Millboard Road
Bourne End
Buckinghamshire
SL8 5XF
UNITED KINGDOM
Tel: 01628 643000
Fax: 01628 643400
Email: consumer-service@hitachi-eu.com

HITACHI EUROPE S.A.
364, Kifissias Ave. & 1, Delfon Str.
152 33 Chalandri
Athens
GREECE
Tel: 1-6837200
Fax: 1-6835694
Email: service.hellas@hitachi-eu.com

HITACHI EUROPE GmbH
Munich Office
Dornacher Strasse 3
D-85622 Feldkirchen bei München
GERMANY
Tel: +49 -89-991 80-0
Fax: +49 - 89 - 991 80 -224
Hotline: +49 - 180 - 551 25 51 (12ct/min.)
Email: HSE-DUS.Service@Hitachi-eu.com

HITACHI EUROPE S.A.
Gran Via Carlos III, 101 - 1
08028 Barcelona
SPAIN
Tel: 93 409 2550
Fax: 93 491 3513
Email: rplan@hitachi-eu.com

HITACHI EUROPE SRL
Via T. Gulli n.39
20147 MILAN
ITALY
Tel: 02 487861
Fax: 02 48786381
Servizio Clienti
Tel. 02 38073415
Email: customerservice.italy@hitachi-eu.com

HITACHI EUROPE AB
Box 77
S-164 94 KISTA
SWEDEN
Tel: 08 562 711 00
Fax: 08 562 711 11
Email: csgswe@hitachi-eu.com

HITACHI EUROPE S.A.S
Lyon Office
B.P. 45, 69671 Bron Cedex
FRANCE
Tel: 04 72 14 29 70
Fax: 04 72 14 29 99
Email: france.consommateur@hitachi-eu.com

HITACHI EUROPE LTD.
Norwegian Branch Office
Strandveien 18
1366 Dysaker
NORWAY
Tel: 02205 9060
Fax: 02205 9061
Email csgnor@hitachi-eu.com

ITEM N.V./S.A. (INTERNATIONAL TRADE FOR ELECTRONIC MATERIAL & MEDIA N.V./S.A)
UCO Tower – Bellevue, 17
B – 9050 GENT
BELGIUM (for BENELUX)
Tel: 09 230 48 01
Fax: 09 230 96 80
Email: hitachi.item@skynet.be

www.hitachi-consumer-eu.com

SM 0067
APRIL 2002